NATIONAL PETROLEUM NEWS

Oil and Coal Fighting It Out For World Markets

By Paul Truesdell
N. P. N. STAFF WRITER

PITTSBURGH, Nov. 23

THE quickstep march of progress has thrown into strange and new relationships the two great basic hydrocarbons, oil and coal, and the industries that are built upon them. That was brought out forcefully in the sessions of the Second International Conference on Bituminous Coal that began here Nov. 19.

The two industries have been competitors for years. They are now more active competitors than ever and their struggle for supremacy in the fuel markets of the world has taken on some new aspects. The fortunes of war are shifting all along the battle line. In some fields where coal stood supreme oil is gaining. At other points oil seems losing to coal and likely to lose still further ground.

Altogether, oil has much the best of it. Consumption of petroleum products in the last few years has increased enormously in the United States; while despite great industrial expansion during this period, consumption of bituminous coal has remained almost stationary. Oil is not wholly responsible for this although it has, of course, been a big factor. Increased efficiency in the use of coal has also contributed to cut down the tonnage consumed.

As a fuel for internal combustion engines—automobiles, aircraft, tractors, motor boats, and diesel engines, petroleum is king. It also stands alone as a lubricant for all other kinds of machinery. While petroleum is king as an internal combustion engine fuel, it is not unchallenged, however.

Scientists are working hard, and with some success, to convert solid coal into synthetic petroleum by means of hydrogenation. This synthetic petroleum would yield gasoline.

They are also working to develop low temperature carbonization of coal to the point where they will get important yields of aromatic motor fuels as a by-product. The high temperature coking ovens already furnish a considerable quantity of motor fuels such as benzol. Light oils produced in some of the low temperature distillation processes in use in Europe are said to make excellent diesel engine fuels without further refining. Most intensive efforts along this line are being made in European countries which have large coal deposits but little or no petroleum.

But from the papers read at the conference and the conversations in corridors and lecture rooms and hotel lobbies it seems evident that the refiners and marketers of petroleum products have nothing to fear in the immediate future on these grounds.

IN THE case of fuels for automobile and aircraft engines, it appears that all the fuel that can be produced from coal for a long time to come will be a complement to, rather than a serious competitor of gasoline. An excellent complement too, because it is generally aromatic in nature and of high anti-knock value.

Powdered coal and fuel oil are teetering on a hairline balance for supremacy as fuels for steam raising, both in shore power plants and on ships. It appears from discussions at the conference that powdered coal has the edge at present, unless fuel oil be sold at prices far below the point of profit to the refiner. This is use of powdered coal according to the most advanced practice.

Oil is gaining rapidly on coal as a domestic heating agent. But here it will meet further opposition in the future — probably not immediately, however—from coke made by carbonization of coal at low temperatures and by gas made from coal, perhaps in gas plants at the mine mouth.

OIL also is gaining over coal inasmuch as diesel and similar explosion engines are in many cases replacing steam units as prime movers in small and medium sized power plants.

As the fight for markets is also naturally a fight for profits, the battle for supremacy will finally be decided at every point on cold facts of economics.

Of course the facts of economics will be finally discovered by the consumer as the technologists of the two industries strive with might and main to make their respective products available at a profit for the greatest possible number of uses.

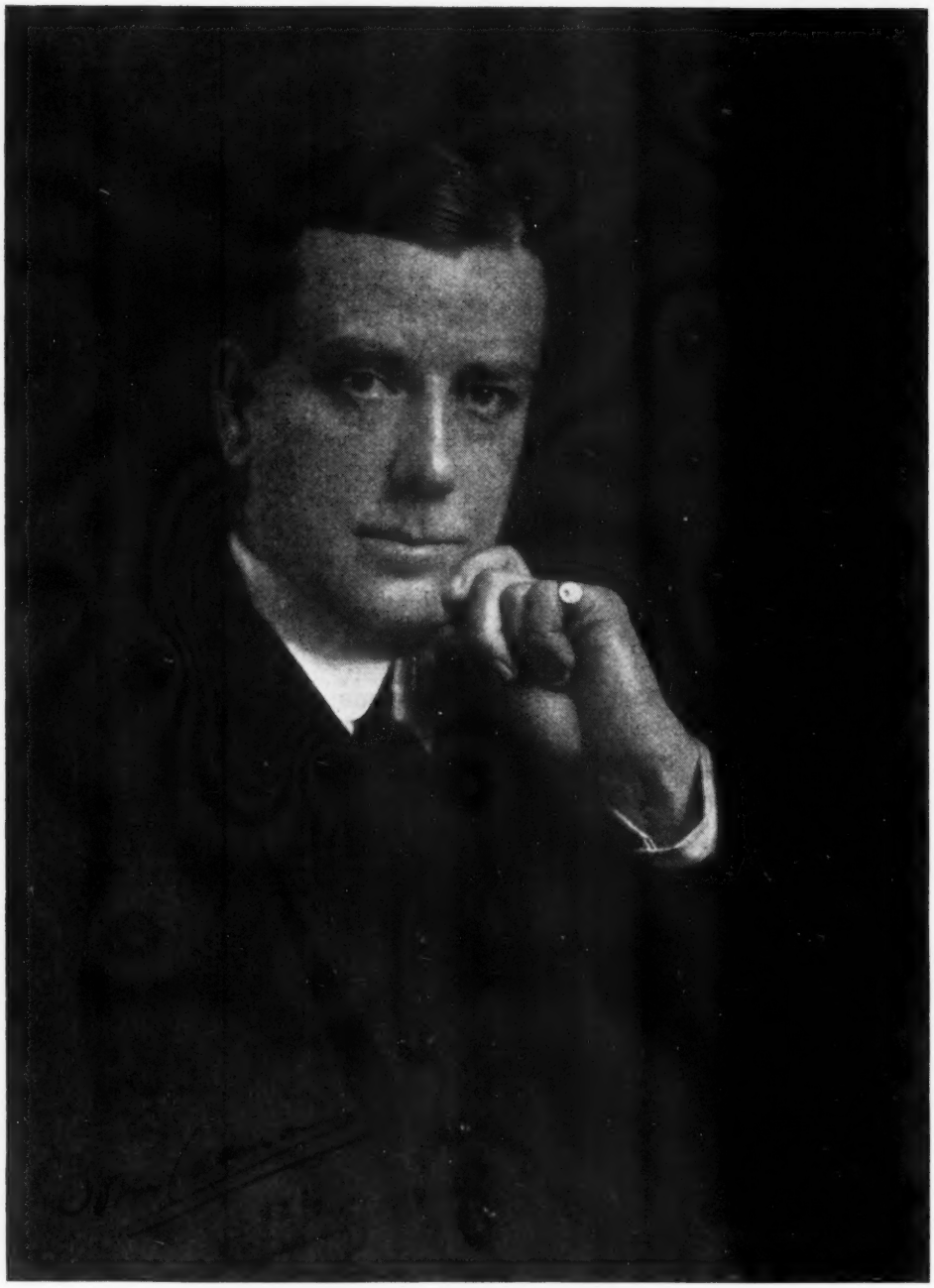
Once the economic facts are decided the competition will probably end in a division of the field, coal and oil eventually each finding the place that it can serve best in the industrial and commercial fabric of the world.

It seems likely that much of the extensive research work that is going on all over the world, and of which interesting glimpses were shown at this international coal conference, are bound at length to bring the oil man and the coal man together to the place where each will take up and carry on work from the point where the other leaves off.

In other words, the time is coming when it will be hard to answer the question:

"Where does the oil industry's prov-

(*Continued on Page* 19)



SIR JOHN CADMAN, chairman, Anglo-Persian Oil Co., England, is to be guest of honor at the coming meeting of the American Petroleum Institute in Chicago. He will speak at the annual banquet on "Petroleum Problems outside the United States."

The above likeness is from a photograph presented by Sir John to J. Strickland King, manager, New York office NATIONAL PETROLEUM NEWS.

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ince end and the coal industry's province begin?"

This was foreshadowed in hints contained in one paper that low boiling phenols, cheaply produced by cracking tar acids, derived by the coal technologists through low temperature distillation of coal, will be blended with formaldehyde produced by petroleum technologists through cracking natural gas, to make a resinoid material of the bakelite type sufficiently cheap to be used for decorative panels in the walls of homes and public buildings and for other purposes for which such material has not so far been available on account of the cost.

From the oil technologist's standpoint the four most important broad subjects of the meeting were:

Conversion of petroleum into coal by means of regulating processes of distillation.

Conversion of coal into petroleum or its like by means of hydrogenation.

Conversion of coal into light oils and coke by means of low temperature distillation.

Development of the use of powdered coal in competition with fuel oil.

All of these were covered by some of the world's leading authorities.

THE most startling feature of the meeting from our standpoint was the proposal of Dr. Walter F. Rittman to manufacture coal from petroleum. Dr. Rittman is professor of engineering at Carnegie Institute of Technology and a consulting engineer in the oil industry. He was one of the earliest investigators in the field of vapor phase cracking.

The proposal did not appear so startling when it was made clear that it was far from the professor's intention to enter into the manufacture of synthetic coal as an end in itself; that what he has worked out and had in successful operation for many months, is an improved method of operating a refinery to recover cracking stock from heavy cracked residue; to make in the refinery more gasoline, which brings a profit, and less into fuel oil, which sells at a loss. (Dr. Rittman's paper is to be found on page 33 of this issue.)

Every oil technologist who attended the conference was anxious to hear from the lips of Friedrich Bergius a report on what technical progress had been made, since his first report at the International Conference on Bituminous Coal in 1926, in his process for hydrogenating coal under pressure to produce light oils.

They were disappointed. Dr. Bergius was at the conference and read a paper but it dealt wholly with the work he and his associates have done in making synthetic coal from cellulose and lignin, and not at all with the operation and results of the Bergius process. Professor Franz Fischer, who spoke at the previous coal conference on his process of synthesizing light oil by combining hydrogen and methane at atmospheric pressure in the presence of a catalyst, was not present at the Pittsburgh meeting at all, although he sent a paper to be read.

An interesting report on what is being done in hydrogenating coal in Germany by means of catalysts was presented by Dr. Carl Krauch, director of the I. G. Farbenindustrie, the great German chemical and dye company. The nearness of this subject to the heart of our industry is shown by the fact that Dr. Krauch was introduced by Walter C. Teagle, president of the Standard of New Jersey, whose company is working in the development of the Bergius process in this country.

Some of the most interesting papers will be summarized in the following paragraphs.

Coal Speaks All Languages

MORE than 1400 fuel technologists gathered at the Second International Conference on Bituminous Coal promoted by Dr. Thomas Stockham Baker, president of Carnegie Institute of Technology. Papers were presented by citizens of England, Germany, France, Japan, Cuba, Russia, Czecho-Slovakia, Belgium, Denmark and Holland.

Of course, a large majority of the delegates were Americans, and there were many Canadians. There were many phases of the conference of only slight interest to our industry, such as classifying and cleaning of coal, straight out combustion problems, geological derivation of coal and so forth.

Hydrogenation of Coal

J. Ivon Graham, University of Birmingham, England, presented a paper in which he gave a resume of research work in high pressure hydrogenation of coal during the past 5 years in the research laboratory of the university. Treatment at around 150 atmospheres and 430 degrees C., on a number of different coals show that some are more amenable to treatment than others. Production of light and heavy oils from a given coal are usually considerably greater by hydrogenation than the yields given by distillation.

* * *

Franz Fischer, director of the Kaiser Wilhelm Institute fuer Kohlenforschung in Muelheim-Ruhr, sent a paper on "The Formation of Benzol and Other Hydrocarbons by the Action of Heat on Methane," which he summarized as follows:

"It was shown that methane can be converted into benzene and other benzene hydrocarbons if it is heated to temperatures of 1000 to 1200 degrees C., when keeping the period of heating, however, shorter than 10 seconds. Under these conditions, processes can be carried out under ordinary pressure; catalyzers are not necessary.

"Conditions can be so adjusted that the chief reaction product consists of benzene hydrocarbons, more than half of which is benzene. The amount of unsaturated hydrocarbons in the residual gas can be reduced to 4 per cent and the separation of carbon can be almost completely prevented."

* * *

Dr. Andre Kling, director of the municipal laboratory of Paris, and Daniel Florentin, subdirector, presented a paper on "Hydrogenation at High Pressure and High Temperature with or without Catalyzing Agents." They carried on their tests with 200 to 300 grams of material. This material was heated in a rotating steel bomb of 2 liters (about 2 quarts) capacity under an initial pressure of hydrogen of 1000 to 1400 pounds per square inch corresponding to working pressures of 2800 to 4200 pounds per square inch, with or without appropriate catalyzing substances.

"Curves of pressure and temperature were simultaneously recorded, the curve of pressure serving as a guide in following the reaction. Gaseous and liquid products evolving during the test were totally and carefully collected and analyzed.

"Polynuclear products of the aromatic series such as naphthalene, anthracene and phenanthrene were dissociated at high temperatures and consequently, transformation into hydrocarbides even in the presence of hydrogen at high pressure was not satisfactory. In fact, such hydrocarbides may be slightly hydrogenated without a catalyzing agent when atoms of hydrogen are fixed on the double bonds of the benzene nucleus in the molecules of such hydrocarbons. We may then observe before thermal dissociation occurs, a loosening of aromatic double bonds sufficient to permit direct fixation of hydrogen with production of aromatic hydrocarbons."

Low Temperature Distillation

Considerable progress has been made apparently in this field since the previous conference on bituminous coal held two years ago and there were a large number of papers on various phases of this subject. One of the principal drawbacks that seemed to stand in the way of further developments two years ago was the inability of many of the processes then operating to make coke hard enough for metallurgical uses or even sturdy enough to withstand the handling necessary for shipment from the plant and delivery to the consumer.

It was generally held that the coke produced by low temperature distillation would be a very satisfactory domestic fuel if it could be put into

Index to Coming Meetings

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

Nebraska Independent Oil Men's Association, Municipal Auditorium, Hastings, Neb., Dec. 4, 5, 6.

Wisconsin Petroleum Association, Schroeder Hotel, Milwaukee, Dec. 12.

Oklahoma Oil Jobbers Association, Oklahoma City, Okla., Jan. 24, 25.

Wisconsin Petroleum Association: Park Hotel, Madison, Jan. 16 and Feb. 13; Schroeder Hotel, Milwaukee, March 13 and Apr. 10; Beaumont Hotel, Green Bay, May 15.

American Oil Men's Association, Congress Hotel, Chicago, Feb. 12, 13, 14.

***Ohio Petroleum Marketers Association, Hotel Statler, Cleveland, O., Feb. 13, 14, 15.**

Iowa Independent Oil Men's Association, Fort Des Moines Hotel, Des Moines, Ia., Feb. 19, 20.

American Association of Petroleum Geologists, Fort Worth, March 21, 22, 23.

***This changed from Neil House, Columbus to Hotel Statler, Cleveland.**

the bin of the consumer without disintegrating into dust. Now, apparently, this difficulty has been largely overcome and it is thought likely that the coke made by some of the processes is even suitable for use in blast furnaces, although this has not been established.

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JACQUES WEISS, a son of Paul Weiss, consulting engineer of the Compagnie Des Mines de Vicoigne, Noeux et Drocourt, read a paper prepared by his father describing a plant in France and an operating method by which coal dust is briquetted with an asphalt binder and roasted with superheated steam to produce solid briquettes having many of the qualities of anthracite coal, and phenols, light oils and gas. The fuel has been so well received by the public that the company is planning to double the capacity of its plant, it was reported. The results of the process are summarized as follows:

"The steam that leaves the chambers at 150 to 250 degrees C. is strongly charged with tar and oils; it passes into a primary condenser where it gives off the greatest of the pitch and heavy tars it contains. The primary condenser is a column with a bubbling pan that permits obtaining speedy fractionation. A special device permits extracting the products at each level.

"The injection of water is regulated in such a manner that the steam leaves the primary condenser at a temperature slightly above 100 degrees C.

"It then passes to a secondary condenser which is nothing but a surface condenser from which is given off:

"1—Average and light tars.

"2—Water charged with complex products, in particular with substances with a phenol function and with a very slight amount of tar; this water is cooled and decanted into large basins and the phenols are recovered.

"3—Gas that is driven into a gasometer and that is composed for the most part of methane and hydrogen and possesses very high calorific power; mixed with gas from a gas generator it feeds the steam superheaters.

"The field to which we have just opened the door is so vast that many years and the collaboration of the best coal technologists of the entire world will be required to explore it completely."

* * *

JOSEF PLASSMANN, director of the Chemisch-Technische Gesellschaft of Duisberg, Germany, presented a paper on "Conversion of Slack Coal and Fines into Lump, Smokeless Fuel —Low Temperature Coke—by the C. T. G. Process."

The paper described a circular furnace which is revolved slowly while the carbonization is in progress, the fine coal being injected into the coking chambers under pressure which causes it to remain tightly packed and so to make a coke of very fine structure and of great firmness.

"Practically speaking," the author states, "the C. T. G. process turns out also twice as much oil as is obtained in a coke oven.

"It is interesting to know that the crude oil contains but 0.02 per cent ash and 0.5 per cent dust which figures are far above 1 per cent with all other processes. The almost dustfree and ashfree composition and the firm, lumpy shape of the low temperature coke are due to the perfectly stationary condition of the coal during the coking process.

"The crude oil as produced by the furnace has proved itself to be eminently suitable for use as a fuel without further refining and has given excellent results as a diesel engine oil.

"Analysis of the gas produced in the process shows a gross calorific value of about 7100 calories per cubic centimeter and a net calorific value of 6400 calories per cubic centimeter. This high grade low temperature gas can be used to advantage for the enrichment of town gas supply, while the ovens themselves can be heated with lower grade gases."

* * *

W. H. Allen Jr., chemical engineer, American Gas & Electric Co., New York, in a paper entitled, "Low Temperature Distillation of Coal by the Carbocite Process," described a plant and a process for low temperature distillation which he said is still in an experimental stage.

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J. V. Henri Winkler, director of the chemical research department of the Compagnie des Mines de Vicoigne, Noeux et Drocourt, Paris, presented a paper on "Continuous Distillation of Coal Tars and Crude Oils by Superheated Steam."

DR. A. MAILHE, professor at the Sorbonne, Paris, summarized his paper on "Low Temperature Tars," as follows:

"From experiments carried out we may conclude:

"1—That we may easily obtain low temperature tar by distilling lignites or coal at temperatures below 46 degrees C.; in presence of a small quantity of superheated steam reaction occurs more easily and tar obtained is of very good quality.

"2—That distillation of bituminous lignites gives oils, phenols and paraffins. Phenols lose the most important part of their sulfur if treated with stannous chloride.

"3—That in low temperature tar obtained from bituminous coal we may easily separate hydrocarbon oils containing certain chemical compounds from phenols and acid compounds soluble in soda by action of methanol, ethanol or even isopropanol.

"4—That methanol and ethanol giving the best results have a density at ordinary temperature of 0.850 to 0.855 for methanol and 0.860 for ethanol.

"5—That hydrocarbon oils are decomposed in the presence of certain catalytic agents either in liquid phase or in vapor phase and that we obtain all products from the lightest to the heaviest.

"6—That phenolic or soda-soluble compounds obtained from low temperature tar and distilling above 250 degrees C. (free from cresols and xylenols) when distilled in the presence of chloride of zinc are decomposed and give phenols with low boiling points (cresols, xylenols) and hydrocarbon oils distilling within a range of 100 to 350 degrees C. We can thus obtain a new proportion of useful phenols and of light and heavy hydrocarbons."

Biggest Market for West Texas Gasoline Is in Middle Western States

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Nov. 26

MORE than 40 per cent of the gasoline being produced at refineries in West Texas is being sold in the Middle West; in the marketing territories of the Standard Oil Co. of Indiana and the Standard Oil Co. of Ohio, according to an original survey conducted by NATIONAL PETROLEUM NEWS. A little over half of the gasoline produced in West Texas is being shipped to consuming centers in Arizona, New Mexico and Texas. None is going into the export or coastwise trade from Gulf ports.

To obtain information regarding the markets which are being developed by the growing West Texas refining group, this publication sent questionnaires to all refiners in that district. Information was requested as to the destination of all shipments of gasoline and gas and fuel oil during September.

Replies were received from the operators of 11 plants with an aggregate capacity of 68,000 barrels per day. The group reporting constituted 78.4 per cent of the capacity of all plants which were operating in the district during September.

Detailed results of the survey of the distribution of West Texas gasoline are given in Table No. 1. In this table it is shown that reporting refiners shipped 2,749,246 gallons of gasoline, or 25.91 per cent of the total of 10,612,762 gallons, to consumers within a radius of 150 miles of the refineries. On the basis of 8000-gallon cars, local shipments totaled 343.65 cars in September or 11.46 cars per day.

To Arizona, New Mexico and Texas, outside of the 150-mile local zone, reporting refiners shipped 2,852,530 gallons or 26.88 per cent of their total sales. At 8000 gallons to the car, this amounted to 356.57 cars or 11.88 cars per day. To the southeastern states west of the Mississippi and south of the Ohio rivers, the West Texas plants shipped only 182,000 gallons or 1.71 per cent of the total. This would amount to only 22.75 cars in the month or 0.76 car per day.

Although freight rates were still very high from West Texas to the St. Louis-Chicago district in September, shipments to this great consuming area totaled 4,678,968 gallons or 44.09 per cent of the total. This would equal 584.87 cars in the month or 19.5 cars per day. To all other areas shipments totaled only 150,000 gallons or 1.41 per cent of the total.

The total gasoline shipments from reporting plants were 10,612,762 gallons, which would figure 1,326.59 cars at 8000 gallons to the car, or a daily average shipment of 44.22 cars per day.

Assuming that the 11 plants representing 78.4 per cent of the operating capacity of the field were representative in point of production as compared with crude capacity and that shipments were made on a similar basis, the writer has prepared an estimate of the total shipments from the field and broken it down into shipments by destination areas. This was done by mathematically raising the reported shipments to 100 per cent from 78.4 per cent.

The estimate of total gasoline shipments from the field is 13,537,000 gallons, or 1692 cars, an average of 56.4 cars per day. Of this amount it is estimated that 5,968,000 gallons or 746 cars were shipped

Table No. 1

Gasoline shipments from West Texas refineries during September, 1928, by destination areas. Based on reports from 11 plants with a total capacity of 68,000 barrels per day representing 78.4 per cent of the total still capacity operating during that month.

Destination	Gallons	% of Total	Cars*	Daily Avg. Cars
Local—within radius of 150 miles	2,749,246	25.91	343.65	11.46
Southwest—Outside Local, in Arizona, New Mexico and Texas	2,852,530	26.88	356.57	11.88
Southeastern States	182,000	1.71	22.75	0.76
Standard of Indiana and Ohio Territories	4,678,986	44.09	584.87	19.50
Export and Coastwise	None	.....	.....	.....
All other destination areas	150,000	1.41	18.75	0.62
Total	10,612,762	100.0	1,326.59	44.22

Estimated Total Gasoline Shipments

Destination	Gallons	Cars*	Daily Avg. Cars
Southwest	3,639,000	455	15.17
Southeast	232,000	29	0.96
S. O. Indiana & Ohio	5,968,000	746	24.87
All others	191,000	24	0.80
Total	13,537,000	1,692	56.40

*8000 gallons used as capacity of tank car.

Table No. 2

Fuel and gas oil shipments from West Texas refineries during September, 1928. Based on reports from 11 plants with a total still capacity of 68,000 barrels per day representing 78.4 per cent of total operating capacity in district.

Destination	Gallons	% of Total	Cars*	Daily Avg. Cars
Local and to Railroad Consumers	23,173,686	70.35	2,896.7	96.56
Arizona, New Mexico and Texas outside of 150-mile zone	5,296,913	16.08	662.1	22.07
Standard of Indiana and Ohio marketing territories	4,469,727	13.57	558.7	18.62
All others	None	.....	.....	.....
Total	32,940,326	100.0	4,117.5	137.25

Estimated Total For Field

	Gallons	Cars	Daily Avg. Cars
Local and to Railroads	29,558,000	3,694.75	123.16
Arizona, New Mexico & Texas outside of 150-mile zone	6,756,000	844.50	28.15
Standard of Indiana & Ohio marketing territories	5,701,000	712.62	23.75
Total	42,015,000	5,251.87	175.06

to Standard of Indiana and Ohio territories, 438 cars locally, 455 cars to Arizona, New Mexico and Texas, 29 cars to the Southeast and 24 cars to all other destinations.

In considering this report of shipments, probably it is proper to assume that the total market within a radius of 150 miles of refineries in West Texas has been completely taken over by the new plants. Freight rates in West Texas are high for short hauls so that jobbers probably are not importing any gasoline from North Texas or the Gulf Coast. Major companies with stations in the district are known to be buying locally to save freight.

To a somewhat less extent, the available market in Arizona, New Mexico and Texas outside of the 150-mile zone has been developed. Further development in this direction, particularly in Texas would have to be at the expense of other Texas refineries and at a low competitive price.

Thus far the West Texas refiners have obtained no rates which will permit them to ship into the Southeast on any large scale. Some effort in that direction has been tried and there are prospects of a few rates being given by the railroads.

Refiners now serving the middle western states in the Mississippi and Ohio valleys should realize that further increases in the output of West Texas gasoline will cause further movement into their marketing territory.

Probably the bulk of the increase in shipments from West Texas will go into the marketing territory of the Standards of Indiana and Ohio with the most of the movement going to the states of Illinois, Indiana, Michigan, Missouri, Iowa, Wisconsin and Minnesota.

Prospects are that the production of gasoline in West Texas will increase month by month during the coming winter, increasing the competitive situation in the Middle West. The estimated total shipments of gasoline from West Texas in September were only 4.167 per cent of the total gasoline shipments from Mid-Continent refineries as reported by the U. S. bureau of mines and actual shipments from reporting plants were 3.267 per cent of the total.

It should be remembered that most of the West Texas gasoline is being moved on the spot market, whereas other groups in the Mid-Continent are selling a majority of their gasoline under some form of contract or to company owned stations. The spot movement from West Texas forms a very considerable part of the total spot movement from the Mid-Continent and has had a considerable influence on the Mid-Continent spot market.

In September Oklahoma refiners reported to Platt's Oilgram the sale of 2359 cars of spot gasoline to jobbers. On this basis it is estimated that total spot movement from Oklahoma to jobbers in September was 2844 cars. The estimated movement of West Texas gasoline into Indiana and Ohio marketing territories for September was 746 cars or 26.23 per cent of the amount sold by Oklahoma refiners spot to jobbers.

In the case of fuel and gas oil a much smaller percentage of September shipments went to north central states, a big proportion being sold to railroads and locally. The reporting plants sold 23,173,686 gallons or 70.35 per cent locally and to railroads, 5,296,913 gallons in Arizona, New Mexico and Texas outside of the 150-mile zone. Shipments to Standards of Indiana and Ohio territory totalled 4,469,727 gallons or 13.57 per cent of the total of 32,940,326 gallons.

Refiners in the field who started early naturally have taken the cream of the fuel oil business. Prospects are that further refinery expansion will force the movement of greater and greater quantities of heavy oil into competitive territory. The West Texas plants produce a very heavy percentage of fuel and gas oil from their crude, the present report indicating shipments of more than three gallons of heavy oils to one of gasoline.

Fuel and gas oil shipments from West Texas represented 12.28 per cent of September shipments of these products as shown by the U. S. Bureau of Mines. The estimated total from West Texas represented 15.66 per cent of Mid-Continent heavy oil shipments. Detailed figures compiled from reports of the 11 refineries on heavy oils are given in Table No. 2.

Nebraska Jobbers to Hear Of Roads, Rates, Laws

LINCOLN, Neb., Nov. 26.—Discussion of oil marketers' problems from many angles and the election of officers will hold the attention of oil jobbers and marketers who attend the eighth annual convention of the Nebraska Independent Oil Men's Association on Dec. 4, 5 and 6. Headquarters will be at the Municipal Auditorium, at Hastings.

One entire session will be devoted to good roads and their maintenance and most of another session to traffic problems and freight rates affecting Nebraska jobbers. Accounting and other marketing problems complete the gist of discussions.

A COMPLETE staff report on the proceedings at the convention of the Independent Oil Men of America, in Chicago, Nov. 19, 20 and 21, is to be found in this issue, starting on Page 89.

Three speakers had been announced in the "Weekly Nioma Service Bulletin" of Nov. 24, the others to be chosen later. Those announced and their subjects are:

J. R. Battenfeld, Battenfeld Grease Oil Co., Kansas City, "The Marketing of Lubricants and Greases"; Roy E. Cochran, Nebraska state engineer, "Nebraska's Highway Construction and Maintenance Program"; and E. H. Polley, field representative, "What the Nebraska Good Roads Association Stands For."

Other topics to be discussed by qualified speakers include: "What Good Roads Mean to Oil Jobbers," by a past president of the Nebraska jobbers association; "Traffic Problems and Freight Rates in Nebraska;" "The American Automobile Association, Its Aims and Functions;" "Relations Between Refiners and Nebraska Petroleum Marketers;" and "Credit and Cost Accounting."

All California Stocks Down 660,000 Bbls. in Oct.

LOS ANGELES, Nov. 23.—Total stocks of all petroleum products in Pacific coast trade territory decreased 660,456 barrels during October, according to statement compiled by the San Francisco office of the American Petroleum Institute.

Stocks of heavy crude, including all grades of fuel oil, increased 758,403 barrels to total of 98,449,077. Refinable crude stocks indicated a decrease of 406,874 barrels in October while gasoline stocks were reduced 725,427. Stocks of naphtha distillates increased 29,705 barrels while miscellaneous stocks declined 316,263 barrels.

The oil fields of California produced at the rate of 626,806 barrels daily average during October, a decrease of 3466 when compared with the previous month. Total of 44 producing oil wells were completed with a total initial production of 47,499 barrels. At the close of October, 638 wells were drilling in the state compared with 582 for the previous month. Four drilling wells were abandoned as dry holes during October, while 7 old producers were plugged and abandoned.

Safety Men Have Appendicitis

CLEVELAND, Nov. 24.—C. W. Smith, assistant director of safety, and R. A. Hartzell, assistant safety engineer, Standard Oil Co. of Indiana, are recuperating from operations for appendicitis, R. N. Blakeslee, field representative, petroleum section, National Safety Council, reported when he called in Cleveland this week.

LOS ANGELES, Nov. 23—Union Oil Co. is building three new 80,000-barrel steel tanks at the company's large refinery at Wilmington, adding 240,000 barrels capacity to the plant's storage facilities.

George Jones, Chairman N. J. Standard Dies After Long Illness

GEORGE H. JONES

NEW YORK, Nov. 24 GEORGE H. Jones, chairman of the board of the Standard Oil Co. of New Jersey, died Nov. 22 at Harbor hospital in New York city. Funeral services were held in Huguenot Memorial Church, Pelham, today and interment was in Kensico cemetery.

Mr. Jones' illness began shortly after he was elected chairman on Nov. 16, 1925, at the age of 53 years and after 35 years of company service. Constant attention to his work had undermined his health and a deep rooted cold developed. Vacations in France in 1925 and in Bermuda in 1927 improved his health, but he soon was troubled with pains in the abdomen. Following examinations this fall he entered Harbor hospital and the abdominal operation was performed Sept. 20 and another Oct. 11. He failed to rally from the effects of these operations.

Reorganization of the executive functions of the Standard of New Jersey towards decentralization of operating control was the principal achievement of Mr. Jones' administration as directing head of the New Jersey company.

The company's properties had expanded and were widespread geographically. It was felt that a change was necessary from the policy of supervision by the entire board with committees of executives in the various departments.

In the reorganization separate companies were formed in the main departments of the business, which manage these departments subject only to general supervision of the board on major affairs of policy. The activities of the company were organized on parallel planes to coordinate the producing, refining, marketing and transporting activities of the Standard of New Jersey and companies controlled by stock ownership.

The Standard Oil Development Co., incorporated in Delaware, became a service organization, handling engineering and chemical development work and carrying on major projects of laboratory research. The Standard Oil Co. of New Jersey, incorporated in Delaware, took over the operation of refining, marketing, producing and pipe line properties formerly owned by the Standard Oil Co. (New Jersey) which became the holding company. The Standard Shipping Co. took over the marine equipment formerly owned by the different companies.

THE death of Mr. Jones is the final chapter of another story of a poor boy's rise to eminence. And it marks the close of the career of another man who rose to the top through Standard Oil's policy of promoting from within its own ranks. Mr. Jones' mother lived to see her son, who began work as a small boy at 35 cents for a day's labor of 12 hours, elected chairman of one of the world's greatest corporations.

He was conversant with intimate details of almost every activity of the company. He was well informed on manufacturing, producing and marketing although his self-training had been on the legal, accounting and financial side. He had a card-index memory which is said to have been aided by his early studies, when his only opportunity to learn came through books borrowed at odd moments, making it necessary to grasp the contents quickly.

On his fiftieth birthday fellow directors presented Mr. Jones with a set of golf clubs and he was elected to the Pelham Country club and the St. Andrews Golf club. He was ordered on a vacation, for his first opportunity to play; but within a few days he was back at his desk. He was not interested in social affairs and took part only in those connected with his company activities.

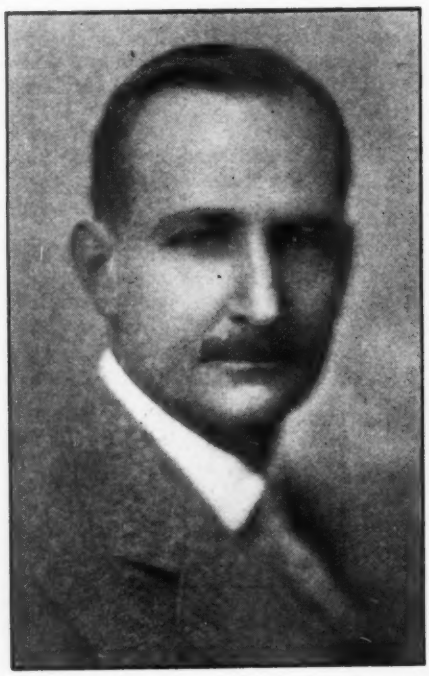
Mr. Jones had no business connections outside of Standard Oil, having refused all directorships in other companies. Since he became chairman he had been active in the U. S. Chamber of Commerce and had made a few speeches for that organization. He was a member of the board of directors of the American Petroleum Institute.

Following his election to the chairmanship he continued to live in his modest home in Pelham. He is survived by his widow, and by two married daughters, Mrs. W. C. Berran and Mrs. H. A. Koecheling, and three grandchildren. All reside in Pelham. His father died a number of years ago and his mother lived 12 days after his election to chairmanship of the board.

Mr. Jones was born in Carthage, N. Y. His father, a Civil war veteran, had lost a leg and had much difficulty in earning a living as a carpenter. His boyhood was a struggle in which there was no time for play, only time for work and a meager schooling through books borrowed from more fortunate children. He did not own a textbook.

His first work was in a mill as a rag sorter and doing odd jobs.

Will Take Part in Institute Program at Chicago



Right is M. E. Lombardi, Standard Oil Co. of California, San Francisco, who is to talk on "Gas Conservation and Production in California," at the morning session Dec. 5 on Production.

Center is Melbert H. Schwarz, chief engineer, Rio Bravo Oil Co., Houston, who is to talk on "Tubular Goods Used in Drilling" at the session on Development and Production Engineering, the morning of Dec. 6.

Right is H. B. Earhart, head of the White Star Refining Co., Detroit, who is to preside at group session on Marketing Problems the afternoon of Dec. 6.

Later he worked in a chair factory for 12 hours for 35 cents a day. At the time he was able to hold his own in school with the other boys. His public school days were over at the age of 14 and he began working in an insurance office.

The insurance office job of messenger boy, porter, collector of premiums, with some selling at night, brought $3 a week. He taught himself shorthand and typewriting. Practice in shorthand was obtained through copying office letters. An old Remington catalog came into his possession and he studied the keyboard diagram, writing the letters on the imaginary keys which he had taken in shorthand.

Decision of the insurance agent to "raise" George's pay by a 50 cents a week reduction was a turning point that lost the insurance world a thorough workman and gave him to our industry.

After working the first half of a year at $3 a week and the second half at $5 the insurance agent decided to reward George by making his wage $4.50 a week throughout the next year. Taking the $40 he had saved he entered a business college at Oswego, N. Y., leaving home on the day before Christmas.

Three weeks of constant work with the skimping of sleep and his eyes failed. He obtained the agency for an old fashioned typewriter that had 72 keys and weighed 55 pounds. He lugged the machine in one hand, his traveling bag in the other, and took to the road. Sales were made in competition with expert typists selling rival makes and he bested the court reporter of Tioga, N. Y. county in a speed contest.

Shortly after turning typewriter salesman the National Transit Co. at Oil City, Pa., a subsidiary of the Standard of New Jersey, wrote to the business college for a young man to take a position at $50 a month. Mr. Jones obtained this position in 1890 and this marked the beginning of 38 years of continuous service with Standard Oil.

Mr. Jones introduced stenography at Oil City and handled all the National Transit's correspondence. At this time he began the study of law at night. In two years he was admitted to the bar at Franklin, Pa., but never practiced.

An incident is told of a neighbor lady asking Mrs. Jones if someone was ill as she noticed the lights burning at 2 a.m. The neighbor was told that she could see this light on almost any morning at that time, or even later.

Assistance in his law studies was given by the Hon. M. F. Elliott, in later years to become general counsel for the Standard Oil Co. in New York, and by Henry McSweeney.

Mr. Jones was transferred in 1897 to Pittsburgh as bookkeeper and accountant as well as stenographer. He did bookkeeping until 5 o'clock each afternoon and worked on the letters until 11 p.m. Two years later he was transferred to New York as secretary to Daniel O'Day, a well known Standard official.

In New York he began the study of his company's pipe line interests. He compiled and made a remarkably complete series of maps and charts. In 1907 he was made assistant to the late A. C. Bedford, whom he succeeded as chairman in 1925. Mr. Jones was elected a director in 1917 and treasurer in 1919. In 1920 he was elected a vice president.

From 1907, when he became assistant to Mr. Bedford, the lives of these two men were parallel, Mr. Jones holding the same offices in succession and in fact the same desks.

Directors Are Pall Bearers

Fellow members of the board of directors of the Standard Oil Co. of New Jersey were the honorary pallbearers at the funeral of the late George H. Jones, chairman of the board. They are Walter C. Teagle, president; S. B. Hunt, vice-president; Walter Jennings, G. G. Black, F. J. Sadler, E. S. Clark, J. H. Senior, C. S. Swain, F. H. Bedford, Jr., and Heinrick von Reedemann.

International Air Show Attracts Oil Men

CHICAGO, Nov. 23.—When the American Petroleum Institute meets in Chicago, Dec. 4, 5 and 6 at the Stevens hotel, the oil men will be only a few blocks from the largest aircraft show ever held. The International Aeronautical exposition will be open at the Coliseum, the First Regiment armory and the Greer building, Chicago's largest exposition halls, Dec. 1 to 9.

The air show is to celebrate the 25th year of man's flight in machines heavier than air. There will be 150 exhibits. Twenty-five airplane engines by 15 manufacturers will be shown, and 75 planes will be exhibited by 54 manufacturers. Planes ranging in size from the huge tri-motored transports to tiny single-seated sport monoplanes.

Eight oil companies are among the exhibitors. They are Cities Service Oil Co., Cleveland, O.; Quaker State Oil Refining Co., Oil City, Pa.; Standard Oil Co. of Indiana, Chicago; Texas Pacific Coal & Oil Co., Fort Worth; The Texas Co., New York; Tide Water Oil Co., New York; Union Oil Co. of California, Los Angeles, and Vacuum Oil Co., New York.

Kansas Refineries Back to Normal After Floods

TULSA, Nov. 26.—Refineries in Kansas are getting back to normal operating schedules after the most disastrous flood in the history of the southern part of the state. All plants are now getting shipments out and are back on stream.

Plants of the White Eagle Oil & Refining Co. at Augusta, the Shell Petroleum Corp. and the Kanotex Refining Co. at Arkansas City were the hardest hit by the flood. All three were forced to quench their fires when waters covered the refinery grounds.

The White Eagle was forced to close down on Nov. 16. Fires were started again in the boiler plant on Nov. 18 and under stills on Nov. 20. Water stood 3 feet over the floor of the refinery office and was 5 to 6 feet deep over the refinery site. Two tanks were washed a quarter of a mile from the plant when water rose so swiftly that the tanks could not be filled with water to hold them down. The White Eagle loss was from $35,000 to $50,000.

The Kanotex and Shell plants at Arkansas City were shut down for two days and some loss resulted. Wichita and El Dorado plants were not affected except by delays in shipments due to washed out railroad lines.

Committee of Nine's Bill Will Be Opposed

HOUSTON, Nov. 22

OPPOSITION to any attempt at the coming meeting of the American Petroleum Institute meeting in Chicago to secure approval of the recommendations of the Committee of Nine for federal legislation dealing with overproduction problems is forecast in a statement just issued by Judge C. B. Ames, vice president and head of the Texas Corp. legal department.

He warns that the subject should be considered most carefully before action is taken which would have a far-reaching effect upon the future of the industry. He says the recommendations of the committee will be submitted at the institute meeting.

He believes, according to a statement in the Texaco Star, that "cooperation and not legislation is the answer" to the oil industry's problem.

Consideration of the committee's recommendation is not specifically assigned to any general, or group, session of the institute meeting. It might come up, of course, at meetings of the executive committee, or less likely, in one of the group sessions on Development and Production Engineering.

The Committee of Nine was created in response to a suggestion of former Secretary of the Interior Work. It is composed of three representatives of the government, three of the oil industry and three of the American Bar Association. It drew up a suggested federal law which would create a federal oil board, and which would provide that agreements to restrict production should not be construed as violating the national anti-trust laws when a state of overproduction was declared by the board to exist.

Declaring that legislation is confined to the borders of one country, Judge Ames went on to say that production in Venezuela, in particular, and in other parts of the world, in general, are as much a part of the problem as the Yates field or Winkler county, in Texas. "Cooperation within the industry has no limits," he said. "The problem being international, demands a solution in international terms. Oklahoma, Texas and California naturally object to penalizing themselves in order to benefit other parts of the world."

"At first sight," says Judge Ames, in commenting upon the proposed bill, "this legislation may appear harmless enough; but, when analyzed, it means that no such agreements can be made without the approval of a federal bureau set up at Washington.

"Such legislation is but the entering wedge to a sweeping control of production in all parts of the United States by a Washington bureau.

"If congress declares such agreements may be made if and when authorized by this federal bureau, it is in effect a declaration that no such agreements can be made without the approval of the federal bureau, and such legislation, if enacted, and if valid, would make illegal the agreements of the producers during the past two years in Oklahoma, Texas and California; notwithstanding the fact that these agreements have been made under the jurisdiction, and with the approval, of the public authorities of those states."

Branding such federal legislation as both unnecessary and unwise, he continues:

"If one will think for a moment of the numerous conferences in Oklahoma, Texas and California during the past two years relative to some particular pool, of the different agreements entered into by the producers, of the different orders made by the Corporation Commission of Oklahoma and the Railroad Commission of Texas relative to these different pools, of the time that has been spent by those commissions and by the producers in working out their local problems, and of the different situations existing in each pool, he will see at once that it would have been impossible to deal with a bureau in Washington and accomplish like results as quickly and as satisfactorily.

"There are numerous local considerations differing vitally from each other in the three great oil producing states, and not only that, but within a single state conditions differ materially in different localities.

"To one who thinks the thing through, it is obvious that taking this power away from the states and centralizing it in Washington, impairs, if it does not destroy, the ability to act quickly and efficiently.

"It is comparatively easy for the producers in Winkler county or in Pecos county to have conferences with each other, and with the Railroad Commission of Texas. As a result, there have been frequent changes in the proration scheme, and each change requires not only conferences between the producers themselves but between the producers and the railroad commission.

"It is a long way from Winkler county to Washington, and it is apparent that the producers could not conveniently journey to Washington every time the picture changes. If federal control is substituted for state control, no matter how sympathetic the federal bureau might be, the whole scheme would be so cumbersome as to be impracticable."

National Petroleum News *Looks* at

—*Harris & Ewing Photo*

The President May be Snowed in but a New Oil Burner is Keeping the White House Snug and Warm so Affairs of State Proceed Without Halt or Discomfort

CLEVELAND, Nov. 26

OIL heating is spreading steadily into mansion and cottage and with its spread is a steady growth in the American market for fuel and furnace oils.

Oil is now heating with equal efficiency the palatial residence and the bungalow. The humble workman is sparing himself and his wife the irksome task of shoveling coal and ashes by using oil, and oil this winter for the first time will make life more comfortable in the White House for the President of the United States.

Best available estimates are that about 750,000 devices have been installed for the burning of oil in this country. This estimate contains burners installed in homes, churches, hospitals, apartment houses, commercial buildings, heat treating plants and furnaces, power plants, central electric stations, railroads, ships, and a multitude of varied industrial devices.

Of that number it is estimated installations of the domestic heating type of oil burner total 304,200. These installations will be in operation this winter.

The domestic heating field is the most rapidly growing of the applications of oil for fuel. This is the field that offers the local petroleum marketer probably the best chance for business expansion.

Men in our industry have vision to foresee a market for burning oils created by the domestic oil heater as great as that created for gasoline by the automobile.

The 304,200 domestic burner installations that will heat American homes this winter represent only about 2 per cent of the potential burner market. From this humble beginning which this year means a consumption of approximately 17,000,000 barrels of light fuel oil, gas oil and distillates, the market may grow to one that will rival gasoline.

Burner manufacturers estimate that next year about 120,000 more homes will be equipped with oil heating plants which will bring the total demand for domestic type heating oils to more than 23,000,000 barrels. This volume of oil is approximately 7 per cent of the volume of this year's gasoline consumption in the United States and the automatic domestic oil heating industry is only 10 years old.

When the automobile industry was 10 years old there were only 55,000 passenger cars and trucks in this country, a rate of growth about one-sixth that of the oil burner. The automobile industry was 15 years old before the number of motor vehicles in use had reached the number the domestic oil burner installations have reached in 10 years. There is nothing to indicate that oil heating will not grow as fast as motor transportation once burner manufacturing reaches a man sized stride with mass production and lower priced products.

Once oil heating is established there is likely to be little quibbling over fair and reasonable prices. The cleanliness, convenience and comfort when oil is burned will far outweigh any increase in operating costs over the costs of heating with coal, the only formidable price competitor of oil in the immediate future. True, exorbitant prices will never be paid for oil by the American public but our industry has shown in the case of gasoline that its scientists will in all likelihood keep pace with the growing demands of the new market. Oil is much cheaper than its only clean, convenient and comfortable competitor—gas.

Most of the leaders of our industry believe the supply of crude oil will be ample for a good many years to meet the demands of both automobiles and oil heaters. One of the generals of the industry recently said the supply of crude from present proven fields was ample for 10 years. In connection with the future supply, Walter C. Teagle, president, Standard Oil Co. of New Jersey, is quoted in the "Handbook of Domestic Oil Heating"[1] as follows:

"I have full faith in the ability of the oil industry to meet the growing demand for oil for domestic heating purposes. The experience of the last generation plus the best forecast which science can make for the coming generation, justifies such faith.

"THE modern domestic oil burner gives a kind of household heating service which gas alone has supplied in the past, and in the country as a whole it gives that service cheaper. In my opinion, oil heating will not only supplant gas, which is its present sole competitor, but, like the gasoline automobile, establish a new standard of American home life and fix a level of comfort and convenience never before attained by any civilization, and at a price well below the limit of its economic value for that use."

Our industry already is cooperating with the oil burner manufacturers in developing the domestic oil heating market. The American Petroleum Institute is contributing half of the funds necessary to support the Oil

[1] "Handbook of Domestic Oil Heating", 1928, edited by Harry F. Tapp, technologist, American Oil Burner Association.

Home Heating as an *Oil Market*

Burners Selling More Rapidly Than Automobiles In Early Years of Motor Industry

Article 1

By Roger B. Stafford
N. P. N. STAFF WRITER

Nels Haugen who has a cobbler shop in La Crosse, Wis., burned 1496 gallons of furnace oil in heating his home (shown above) last winter

Heating Institute and has supplied the latter institute, which is engaged in acquainting the American public with the advantages and amenities of oil heat, with its new director, Trell W. Yocum.

Automatic oil heat may be installed in any home that has electric current and a central heating plant. At the beginning of this year 17,596,400 homes were connected with central electric stations.[2] This number was 63 per cent of the 27,930,800 homes in the United States. One heating authority estimates that 49 per cent of the homes are heated with central plants—hot air furnaces, and steam, vapor and hot water boilers. This would make the number of central plants 13,491,100, the present potential market for automatic heating devices and furnace oil.

[2] Electrical World, Jan. 21, 1928.

Automatic burners installed this winter total 239,000 or less than 2 per cent of the potential market. Semi-automatic burners total about 65,200 or just enough to bring the percentage of total burner installations to a trifle above 2 per cent of the potential market. And no account is taken of the number of oil burners installed in stoves which would add to the volume of the oil man's furnace oil market.

Although oil has been used for heating homes on the Pacific coast a good many years, the real birth of automatic home heating with oil came just after the end of the World War when coal prices rose and coal was hard to get at any price.

Thousands of oil burners, a great many of them of the natural draft type which required more or less manual attention, were installed in the middle west. These burners had many advantages and many disadvantages. They required considerable attention which often made them little better than coal burning heating plants.

Then early in this decade came the development of automatic burners These were burners with mechanical drafts that removed them from the vagaries of atmospheric pressures, and electric brains that responded to impulses due to changes of tempera ture.

THERE were about 7500 natural draft and 5000 automatic burners in operation in 1921 and the natural draft burner was dominant until 1926 when the automatic took a substantial lead and has been increasing its lead each year since.

Automatic heaters made substantial progress in the middle western states where good furnace coal was hard to get and where oil was relatively cheap.

Hundreds of installations were made in Kansas City, St. Louis, Minneapolis, St. Paul, Milwaukee, Chicago and many of the smaller cities. Detroit and Indianapolis came a little later with a desire to abolish slavery to the coal shovel and ash can.

Before the war a few large residences in New England and Atlantic coast cities to the south were heated with oil burners but these burners were largely of the commercial type and not strictly a domestic heater.

With the development of the full automatic domestic type burner great strides were made in New England and other eastern cities. But the anthracite coal strike of 1926 was a boon. Installations permit figures of

What Furnace Oil Market Offers

THE domestic oil burner industry with its attendant outlet for petroleum products, is developing more rapidly than the automotive industry developed in its early years.

This fact is revealed in an investigation by NATIONAL PETROLEUM NEWS of the new furnace oil market which in time may provide as profitable a field for the petroleum marketer as the automobile.

The present expanse of the domestic oil heating field is shown in this article, the first of a series on oil heating.

In subsequent articles will be discussed further details of the growth of heating with oil, how our industry may cooperate with oil burner manufacturers and dealers in developing the field, the probable future supply of heating oils, how burner makers are expanding their markets, and how petroleum marketers may merchandise furnace oils at a profit.

Other phases of the new market and what it means to the petroleum producer, refiner and marketer will also be topics in the discussion.

The best furnace oil markets at present are in New England and southward along the Atlantic coast to Washington, in the middle west, and on the Pacific coast. The shaded areas on this map indicate the degree of intensity of the markets although insufficient data are at hand to make a specific analysis of each community. There may be some poor spots in states where the market generally is reported as good, and some good spots where the market has been reported poor. However, the map gives the oil marketer a general idea of conditions today. The poor spots usually coincide with places where natural gas has been available at relatively low prices, where coal is cheap or where climatic conditions have retarded installations of the most advanced means of heating

the city of Philadelphia will illustrate:

From April 15, 1925, when permits were first required, to the end of 1925 the number of permits issued was 1310, this period took in the peak months of sales, September, October, November and December. In 1926 the number of installations issued totaled 2342; in 1927 1322 and this year to Sept. 24 1033. Final figures for this year will show more installations than in 1927. Installations in none of the residential suburbs of Philadelphia are included in the figures just given.

The market research department of the Philadelphia *Public Ledger* estimates the number of domestic oil heating plants in a radius of 15 miles of the Philadelphia City Hall up to 15,000, and that 20,000 will be in operation within a year. Almost all new houses in the better residential developments of that city are equipped with oil heaters before they are put on the market.

One heating authority in that city said in the last eight years, oil for home heating had supplanted a market for 750,000 tons of anthracite coal a year. One of seven or eight oil companies that are supplying the Philadelphia commercial and domestic market with fuel and furnace oil said it sold 15,000,000 gallons in the metropolitan area last year.

And Philadelphia is just one of the many good oil markets on the eastern seaboard.

A small local oil company in a New England city of less than 200,000 population is selling more than 5,000,000 gallons of furnace oil a season. A local company in another city of less than 300,000 population has 450 furnace oil accounts worth about 1,200,000 gallons per heating season, and this company has some active big company competition besides the competition of two well established local Independents.

In a middle western city of only 30,000 population the furnace oil business of an Independent marketer exceeds 500,000 gallons a year.

A survey of automatic oil heating made by the electrical industry for the purpose of showing the size of the demand for current showed that 33 per cent of the automatic burners in operation in the United States, were in New England, New York, and northern New Jersey; 35 per cent were in Pennsylvania, Ohio, southern New Jersey, Delaware, Maryland, District of Columbia, Kentucky and Illinois; 17 per cent were in the middle west outside Illinois, Ohio and Kentucky, and 15 per cent on the Pacific coast.

The map published herewith gives an idea of the present importance of markets for furnace oils. This map is based on information collected from several of the larger burner manufacturers by NATIONAL PETROLEUM NEWS, and on a national survey of fuel oil distribution made by E. B. Swanson, economic analyst of the U. S. Bureau of Mines.

A combination of statistics collected from the best available sources shows that less than 10 per cent of the fuel oil, gas oil and distillates used for generating heat in the United States, is used for heating commercial and residential buildings. Less than 5 per cent is used for heating homes. Relative volumes used for all heating purposes are shown in the accompanying circular graph.

Although there has been a gradual increase in the growth of use of fuel oil in many industries except by gas and electric power plants, the domes-

tic heating field seems virtually unscratched.

The total fuel oil consumed in the United States in 1927, as revealed by the Swanson survey, amounted to 333,760,014 barrels. To this total may be added 6,000,000 barrels of distillate consumed by domestic heating plants. In 1926 fuel oil consumption amounted to 334,029,872 barrels, as shown by the Swanson survey, to which might be added 6,170,000 barrels of distillate consumed in domestic heating plants.

This indicates that less distillate is being burned in domestic heating plants than formerly. That was probably true last year but this season many new low priced burners will consume the light distillates.

The Swanson survey, however, shows a large gain in the use of light fuel oils—those Mid-Continent oils of 28-32 gravity and 25 gravity California diesel oil. The volume of light fuel oils consumed in 1926 was 2,905,401 barrels and in 1927, 6,377,479 barrels. In spite of a probable rise in the curve of distillate demand which may be evident this season the general trend of the domestic oil heating market is toward the heavier oils as will be explained in a subsequent article.

The purposes for which the United States used its fuel oil, gas oil and distillate this year. The percentages are approximate

Ohio Producers Talk Crude Prices and Cooperation

LOGAN, O., Nov. 27.—Cooperation within the oil industry and other subjects of particular interest to oil producers were discussed at the annual meeting of the Southeastern Ohio Oil & Gas Producers' Association at the Lafayette Hotel, Marietta, on Nov. 22. The meeting was one of the most interesting ever held by the association and was well attended, according to W. L. Franks, secretary.

A. D. Hufford, president during the past year, presided at the meeting and briefly outlined the accomplishments of the association, the value and possibilities of the future and the importance of cooperation.

An equitable price for crude and the necessity of cooperation in the industry were the high lights of the address of O. C. Dunn, newly elected president. Mr. Dunn was formerly vice president of the association and chairman of the production committee.

His address was followed by a round table discussion during which A. D. Hufford, former president of the association, introduced several speakers. Among these were: Hon. George White, E. J. Mildren, O. D. McPheron, John H. McCoy, F. M. Selby and O. C. Dunn, of Marietta; Fred N. Stover, Matamoras; H. Barber, Logan; Barton Holl, Logan; F. W. Douglass, Woodsfield; Thomas B. Green, of The Buckeye Pipe Line Co., Lima; P. R. Applegate, New York City, assistant to the president of The Buckeye Pipe Line Co. John Cline, Matamoras, field man for The West Virginia Pipe Line Co.

Besides Mr. Dunn, who was elected president, these officers were elected by the governing board to serve during the coming year: F. W. Douglass and H. B. Goddard, vice president; W. L. Franks, Logan, secretary and treasurer.

These directors were elected by the association members: A. D. Hufford, Bremen; H. D. Atha, Logan; W. E. Burns, O. C. Dunn, E. J. Mildren and H. B. Goddard, Marietta; A. E. Faine, New Straitsville; F. W. Douglass and H. E. Stewart, Woodsfield; Barton Holl, Logan; and Fred N. Stover.

Committee chairmen chosen included: H. D. Atha, marketing committee; A. E. Faine, legislative; Fred N. Stover, production; E. J. Mildren, membership; W. E. Burns, publicity; O. D. McPheron, Marietta, taxation.

More than 25 new members joined the association during the meeting. A membership campaign will be inaugurated after the new year.

The meeting was attended by oil producers from Marietta, Woodsfield, New Matamoras, Newark, Zanesville, Caldwell, Bremen, Logan and other localities, some of them outside of southeastern Ohio.

A dinner was served by the Marietta members and supply men. The Chandler Trio furnished music during the dinner hour.

Late Market Changes

CHICAGO—On Nov. 27 Standard of Indiana reduced service station price only of gasoline 2 cents at Indianapolis, making new price 18.2 cents, including 2 cent state tax. Tank wagon is unchanged at 18.2 cents.

O'Neil Quits The Texas Co.

LOS ANGELES, Nov. 24.—L. B. "Tip" O'Neil, has resigned as vice-president and director of The Texas Co. of California. It is understood that he will become an Independent operator. Mr. O'Neil and his brother, John, built a refinery in Montana and in 1926 sold out to the California Petroleum Corp., which later was taken over by The Texas Co.

Airplane Oil Service

Aeromotive Engineering Co. of America, a $1,000,000 concern, which will establish super-service stations for aircraft, was recently organized in Los Angeles. Stations are to be erected at the various municipal airports along the Pacific coast and southern border of the United States. Carl D. Oppenheimer, technical advisor for Union Air Lines, is president of the new company with Commander George O. Noville, polar flyer, San Francisco, chairman of the board.

LOS ANGELES, Nov. 23.—Elwood Jones, Los Angeles manager for Stockham Pipe & Fittings Co., left this city recently for an extended trip throughout the Northwest.

Bourque Resigns Natural Gasoline Secretaryship

TULSA, Nov. 24

A. V. BOURQUE, secretary of the Natural Gasoline Association of America, presented his resignation to the board of directors of that group at a special meeting here Nov. 23. He requested that he be relieved of duty by Dec. 15, so that he may take up his future work in association with Howard Bennette, managing director of the Western Petroleum Refiners Association. [Editor's Note: Photograph of Mr. Bourque will be found in connection with another story, page 61, this issue].

Mr. Bourque has been secretary of the gasoline association since May 24, 1921, a month after the manufacturers perfected their organization. During the past three years he has been treasurer of the organization and recently was made secretary of the Natural Gasoline Supply Men's Association. Prior to his connection with the trade association Mr. Bourque was engaged in oil writing for various newspapers and trade publications. He came from Beaumont, Texas, to Tulsa as an oil correspondent for the Oil & Gas Journal in 1912.

When the natural gasoline manufacturers organized in 1921 the industry was suffering from a bad name which it had gotten as a result of the marketing of kerosene blends during the war period by unscrupulous agencies. The name "Natural Gasoline" was coined to supplant the old name "Casinghead Gasoline" and the manufacturers developed standard grades and specifications to protect buyers.

The association aided the Oklahoma Natural Gas Co. in its Saybolt patent litigation involving the right to use the absorption process without payment of royalties, winning the case in the Circuit Court of Appeals. It prevented the Bureau of Explosives from requiring the shipping of all gasoline over 8 pounds vapor tension in insulated cars by conducting an exhaustive series of tests on cars in transit and on sidings.

In cooperation with the American Gas Association the manufacturers developed a code for testing the gasoline content of gas. The basis of payment on Indian lands in the Osage and the Five Civilized Tribes was changed to actual selling prices from the Indiana tank wagon through association work.

Nearly three years ago the association began the cooperative commercial research program undertaken by an oil association. Dr. George Granger Brown of the University of Michigan, was placed in charge of the work and in the three years has developed a tremendous mass of technical data regarding natural gasoline including its anti-knock value, the value of high natural gasoline content blends for obtaining easy starting and acceleration and methods of preventing vapor lock in carburetors.

Mr. Bourque will leave the association at a time when its membership is at its height, embracing manufacturers who produce more than 75 per cent of the natural gasoline produced in the United States. Many important eastern and California companies are members as well as most manufacturers in the Mid-Continent.

No successor has been selected for Mr. Bourque. A committee composed of H. A. Trower, president, D. E. Buchanan and E. L. Peck, past presidents, was named to seek a suitable man and present his name to the board.

Collapsible Fence Used As Safety Measure

CLEVELAND, Nov. 24.—The East Ohio Gas Co. has surrounded its natural gasoline plant near Doylestown, O., with a collapsible fence. When the fence is pushed from the inside of the enclosure it falls down so that men may flee clear of the grounds in any direction in case of a fire or explosion. The fence is constructed of horizontal bars and held in place by forked standards. When pushed from the outside the fence is pushed tighter against the forks. The fence keeps out all live stock except humans, said J. M. Sisson, the company's safety chief.

New Prairie Treasurer

INDEPENDENCE, Kans., Nov. 24.—F. A. Luoy has been elected treasurer of the Prairie Pipe Line Co., succeeding the late Ralph G. Hare, whose death occurred a week earlier. Mr. Luoy was assistant treasurer of the company and in addition, secretary and treasurer of the Pure Oil Pipe Line Co. of Texas, a subsidiary of the Prairie Pipe. He also was elected to the directorate of the Prairie Pipe at the time he was promoted.

Mr. Luoy was born in Ohio and in his youth was employed as a messenger by the Buckeye Pipe Line Co. He has been with the Prairie Pipe for about 25 years and has made his home in Independence since 1904.

W. E. WALL

W. E. Wall Announces Expansion Plans

CLEVELAND, Nov. 26.—W. E. Wall has announced that the carload marketing facilities of Wall & Steigerwald, Inc., are to be enlarged. The corporation plans to acquire a warehouse and compounding plant in Cleveland shortly for the handling and manufacture of all types of lubricating oils and compounds.

The name of the corporation remains unchanged although G. J. Steigerwald has withdrawn and organized the Steigerwald Petroleum Co. Offices of Wall & Steigerwald, Inc., are to remain in the Engineers Bank building, Cleveland.

For many years Mr. Wall was at the head of the Fred G. Clark Co., Cleveland, and Mr. Steigerwald was associated with him first as salesman and later as vice-president of the Clark company. Together they formed the Wall & Steigerwald, Inc., in 1924.

Mr. Wall was one of the founders of the National Petroleum Association and served as its president several terms in its early years.

Correction

In an article on page 17 of NATIONAL PETROLEUM NEWS for Nov. 21 pertaining to the new price schedule of the Standard Oil Co. of New Jersey, appeared this sentence in a reference to the new Q. D. A. of the Standard Oil Co. of Indiana: "A consumer has to buy 500 gallons of gasoline a month to get the 2-cent discount from the tank wagon price dealers receive." This should have read, "to get the 2-cent discount from the *service station* price."

Long Beach in Cooperative Gas Conservation Move

LOS ANGELES, Nov. 23

OPERATORS in the Long Beach field will be asked to cooperate in curtailment measures that will reduce the waste of gas there by about 60,000,000 cubic feet daily, at the same time bringing about a reduction of only 3 to 5 per cent in the production of oil.

Long Beach will be the latest general producing district in California to cooperatively attack the problem of cutting down the waste of gas produced along with the oil.

All the plans worked out for various districts have been under the general supervision of the Operators' General Committee on Gas Conservation, which has been functioning for about a year, its organization being the result of conferences between state officials and leading oil executives starting in October, 1927.

At the same time, operators representing about 75 per cent of the estimated proven acreage for deeper production in Santa Fe Springs, have approved the plan to conserve the gas expected from the deeper Buckbee zone, which many wells now drilling will soon tap.

The principle of gas conservation has been adopted at Santa Fe Springs as a preventive measure. Wells drilled to the Buckbee sand, at around 6000 feet, are known to be heavy gas producers. An organization of operators is being formed to store excess gas from this sand in a shallower Meyer sand, which has been depleted by earlier production of oil.

Tentative plans for the conservation program at Long Beach were approved when presented by a subcommittee at the regular monthly meeting, a few days ago, of the Operators General Committee on Gas Conservation.

The sub-committee, of which T. E. Swigart, of the Shell Co. of California, is chairman, estimates that 125,000,000 cubic feet of gas a day are now going to waste in Long Beach. This amount of loss is expected to continue for six months. It is expected there will be a gas surplus for about a year, after which the supply will diminish rapidly.

The tentative plan calls for gas curtailment at Long Beach to the extent of about 17 per cent, each operator having the option of saving this amount through curtailment, involving the cutting down of his oil production also, or through repressuring operations. Control of the curtailment operations would be in the hands of a committee of engineers.

Operators controlling approximately 65 per cent of the total production at Long Beach have given their approval of the principle of the plan involved and the big job will be to secure the approval of a number of smaller or Independent operators. More than 160 wells are still drilling in this field and completions average between five and 10 each week.

The curtailment plan for Santa Fe Springs involves organization of the Santa Fe Springs Gas Conservation Association, which is to be a non-profit organization to handle a certain portion of the waste gas from the deep zone to repressure the upper Meyer zone. In addition, it is now recognized that curtailment of producing wells from the deeper zone will have to be resorted to. The repressuring plan can use not to exceed about 35,000,000 cubic feet of gas daily to store in the Meyer sand and there is already a waste exceeding that amount, with less than a dozen wells on production from the deep zone.

The plan for Santa Fe Springs has been worked out by a special committee composed of Joseph Jensen, Associated Oil Co.; J. U. Stair, Shell Co. of California and B. E. Parsons, General Petroleum Corp. With operators representing approximately 75 per cent of the estimated proven acreage from the deep zone already signifying their approval of the two features of the conservation plan, it is believed that 90 per cent of total production can be brought into the plan.

At the November meeting of the Operators General Committee on Gas Conservation the various sub-committees rendered the usual monthly routine reports, which indicated that the total production of gas in the state in October was 899,900,000 cubic feet daily, against a total potential production of 1,043,250,000 cubic feet. Utilization of gas in October consisted of using 345,000,000 feet in the fields and 315,860,000 feet sold. In September 282,000,000 cubic feet were sold.

The total injected into old formations in October was 27,146,000 feet, while the surplus, or waste, was 211,-160,000 cubic feet. This volume of waste was 8,000,000 feet less than during the previous month.

Total of 143,349,000 cubic feet daily was held in the ground, or conserved, during the month, which would have been wasted with no conservation plan in effect.

N. F. P. A. Adopts Trial Service Station Rules

TULSA, Nov. 24.—Regulations governing the building of service stations, the type of discharge equipment used, and the care and operation of service station equipment, were tentatively adopted here by the flammable liquids committee of the National Fire Protection Association. This committee for many years has drafted regulations which have been adopted by states, cities and fire marshals.

The proposed regulations will be considered at the Chicago meeting of the American Petroleum Institute. Details of the regulations will be published in the Dec. 5 issue of NATIONAL PETROLEUM NEWS.

The committee also adopted tentative regulations governing tank trailers. These regulations provide that all trailers shall be securely attached to the vehicle that draws it with drawbars and safety chains; that each trailer shall be equipped with brakes which may be operated by the driver of the truck or tractor that draws the trailer; that each trailer shall have tail and side lights, and all four and six-wheeled trailers shall be of the fifth wheel type.

H. E. Newell, National Board of Fire Underwriters and secretary of the flammable liquids committee; E. J. Smith, Underwriters Laboratories, and Warren C. Platt, editor, NATIONAL PETROLEUM NEWS, were appointed a committee to take up with the A. P. I. a protest against allowing truck tanks with no compartments and against the abolition of a volume limit in the size of truck tanks. This protest was raised by William B. White, New York Board of Fire Underwriters.

The committee decided that no special regulations were required for storing oils that flash at higher temperatures than 187 degrees F.

The committee met in Tulsa to give the non-oil members a chance to see the oil industry at close range. Oil industry members that attended were: D. V. Stroop, assistant to Dr. R. P. Anderson, American Petroleum Institute technologist; W. F. Rooney, fire and safety department, Tide Water Oil Co., New York; F. L. Newcomb, engineering department, Standard Oil Co. of New Jersey, who represented C. H. Haupt, chief engineer of the Standard; A. B. Cox, The Texas Corp., New York, and Mr. Platt.

Several Mid-Continent oil men attended the meeting. The committee visited the West Tulsa refinery of The Texas Corp. as the guest of Mr. Cox.

Review of Late Production News

CRUDE oil production in this country, for the week ending Nov. 24, gained 14,150 barrels daily average, according to the figures of the American Petroleum Institute. The total figure was 2,505,000 barrels.

Crude oil imported gained 83,428 barrels daily average, to 301,714 barrels. Total crude supply thus gained 97,578 barrels and stood at the total figure of 2,806,714 barrels.

California fields gained over 22,000 barrels for the week, Santa Fe Springs 16,000 barrels and Long Beach 5000 barrels. Oklahoma fields and West Texas fields suffered a net loss. Little River, in Seminole district in Oklahoma, was off nearly 5000 barrels and Pecos County in West Texas dropped 3500 barrels.

Oklahoma-Kansas

THE addition of another well to the western part of the Wilcox producing area in the St. Louis field helped to keep production from this area at about the same level as for the past two weeks. A 1000-barrel well to the north indicates a quarter-mile extension to this part of the field. The new producer, the Pure Oil Co. No. 1 Thomas, in the SE NE NE of 26-7N-4E, has very little gas with the oil. It flows its production for a while and then goes dead completely, as does the Magnolia well offsetting it to the south. The extension, the No. 12 Blandin of the Sinclair, is offset to the west by a Wilcox dry hole.

Possibilities of a Hunton lime field in Twp. 9N-4E were indicated by the Atlantic-Gypsy well in the SE NE NE of 13-9-4. This wildcat made one flow of 86 barrels from the Hunton lime topped at 4206 feet and drilled to 4222. It is estimated as a 200-barrel well in its present shape.

In the naval reserve tracts in the Osage, Gypsy-Marland interests have a wildcat showing for about 1000 barrels in their No. 1 Mary Agnes, in the NE SW of 22-24N-7E. It was drilled in several months ago but produced to less than 100 barrels daily until last week.

California

SIX new wells at Santa Fe Springs, 10 at Long Beach and a light gravity oil producer at Rosecrans helped out the production column in California last week. Some 20,000 barrels of new production was credited to Santa Fe Springs, while the new wells at Long Beach furnished about 10,000 barrels.

Two wells at Santa Fe Springs have drilled into a water sand about 100 to 125 feet below the top of the Buckbee oil sand, making it possible that the sand is not nearly so thick as had been thought. There is an intermediate sand just above the Buckbee a little over 100 feet in thickness, and, if there is not still another sand below the Buckbee, Santa Fe Springs may not be such a market wrecker as had been expected. But guesses at this stage are only guesses.

The burning well, the second in this field, is to be controlled through the tunnel method and the tunnel should be connected up early this week.

Barnsdall's O'Dea 13 in the old Rosecrans field was placed on production at 5404 feet for about 2000 barrels of 38 gravity oil, after being deepened from 4979 feet. This is on an old lease which has been producing high gravity oil for some time, although the wells do not hold up well and have to be worked over frequently.

Texas, New Mexico, Louisiana

A SHALLOW wildcat well, good for upwards of 100 barrels daily at 1626-1628 feet, appears to have opened the second oil field of Pecos county, West Texas. It was drilled by the Pecos Valley Oil Co., in the center of the west quarter of Sec. 22, H&GN Block 10, northeast of Fort Stockton, on fee acreage.

The new area is more than 25 miles northwest of the phenomenal Yates shallow field, of Pecos county, and about 14 miles south of the recent Ward county discovery of Shipley and others, on Hayzlett land, in Sec. 17, Block 5. Maximum daily production of the Shipley well has been 135 barrels daily at 2481 feet.

Both the Pecos Valley and the Shipley wells are on a northwest-southeast trend extending through Ward and Winkler counties into Lea county, New Mexico. Earlier dry holes in the general area of the Pecos Valley well, plus surface geology, have indicated structurally higher ground west of the discovery. A similar "high," separated from the Pecos structure by a "saddle," is believed to exist west of the Shipley well.

The week's sole development of interest in New Mexico was the finding of another oil show at 3543-3547 feet in the Gypsy Oil Co.'s No. 1 state test, 34-21S-36E, Lea county. This structurally high well has been making gas at various levels below 3000 feet since July. The structurally low Joyner well of Skelly Oil Co., in 26-25S-36E, Lea county, will be drilled deeper. It made 125 barrels of oil, accompanied by water, in four trips of the swab early in the week.

Operations in older areas of Texas and Louisiana were of local interest only throughout the week.

Wyoming, Montana

THE Buck Creek Oil Co. completed a surprising gas well in the Lance Creek field, eastern Wyoming. It is producing 31,000,000 cubic feet. It was deepened from an old oil-producing sand.

Midwest Refining Co. has taken over the Rosenburg interests holdings in the Frannie field, northern Wyoming, and will drill four wells immediately.

A holding company for the interests identified with Ohio Oil Co. in the laying of the gas pipe line from southwestern Wyoming to Salt Lake City has been formed in Pittsburgh as the Western Public Service Corp.

Maple Leaf Refining Co. of Coutts, Alberta, Canada, is paying a bonus of 20 cents above the posted field price for Kevin-Sunburst, Montana, crude. The posted field price, fixed by the Ohio Oil Co. is $1.75.

Midwest Refining Co. has made locations for six wells to be drilled on the Pondera, Mont., holdings recently acquired from the Montana Pacific Oil Co. The company will be forced to drill about 20 wells this season in order to meet its offset obligations.

An interesting wildcat well is to be drilled on the unit operation plan by the Barnsdall, Gypsy, Shell Union of California, Magnolia, and Indian Territory Illuminating companies on a structure lying between Fort Morgan and Brush, in Morgan county, in Colorado.

In southeastern New Mexico, Lea county, The Texas Production Co. has announced location for three more wells to be drilled immediately and the Getty Oil Co. has announced one.

Getting Rid of the Grief of Coking By Running Residue Into Coal

By Dr. Walter F. Rittman*

Presented before the International Conference on Bituminous Coal, Pittsburgh, Nov. 19-24, 1928

TO APPEAR before this conference, which is largely devoted to the manufacture of petroleum from coal, with the description of a plant manufacturing coal from petroleum requires real courage.

However, it is a poor rule which does not work both ways, and further, I hasten to say it is unlikely that the coal industry will be demoralized by competition from the operation I am about to describe, nor that those interested in the main theme of this conference need be seriously concerned.

On the contrary, it is my belief that the coal I am about to describe may prove to be an ideal starting material or raw product, either alone or mixed with other coals, for their processes of converting coal into petroleum. As matters now stand, one important American oil refinery is planning to provide facilities to convert its crude petroleum entirely into gasoline with the manufacture of some coal as a by-product. With the combination of processes I have indicated above it would by no means be difficult to visualize a plant capable of converting the *crude petroleum entirely into gasoline*. Probably I am not the renegade one might conclude from the title of my paper.

The first question which naturally arises is: "Is it commercial?" For a period of months the plant in question has been manufacturing some 50 tons a day of the material. Facilities are now being provided to increase this to 100 tons a day, with plans under way to considerably increase that output; the balance sheet is decidedly in the black, but these statements do not answer why it is commercial. To answer these questions it becomes necessary to briefly describe conditions, more particularly those existing in the United States Mid-Continent section, pertaining to gasoline production and fuel oil markets. Despite the predictions, widely published, made some five years ago by a prominent committee to the effect that America's oil supply would be exhausted in some six years, the American petroleum industry is today facing a serious menace in a potential avalanche of "shut in" crude petroleum.

To the credit of the industry, it is becoming the practice of oil refiners to handle only such quantities of crude oil as can be refined efficiently and profitably. Whereas, not many years ago the average production of gasoline from crude oil was well below 20 per cent, it is by no means unusual today to find refineries converting 75-80 per cent of their crude oil into gasoline.

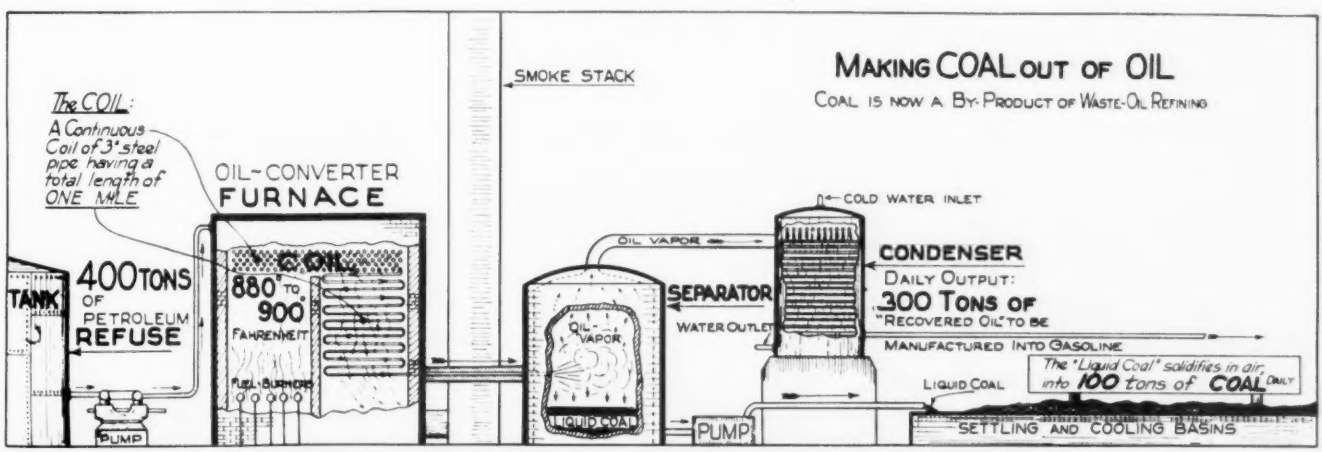
This is achieved by what are known as cracking processes. The "skimming plant" which merely distilled off the gasoline from the crude oil and sold the balance as fuel oil no longer can compete with the more complete refinery.

Low grade fuel oil at the present time in the Middle West is selling for about 1½ cents a gallon, and during the past six months quantities

THIS system described by Dr. Rittman was developed by him to meet a particular set of conditions in a particular refinery. It is conceivable that it might be applicable to other refineries under certain conditions. However, it should not be regarded as a universal panacea to be used in all refineries to minimize production of fuel oil.

In some plants coking is undoubtedly profitable, where the coke is shipped on advantageous freight rates for industrial purposes. Such plants of course would not find the Rittman plan advantageous. His system would be expected to produce a lesser amount of overhead distillate suitable for cracking than running straight down to coke would produce. Its feasibility would appear to depend on whether the sacrifice in the amount of distillate overbalances the saving in labor, depreciation of equipment, and down time experienced in the batch coking process, and also whether or not there is a profitable market for coke.—P. T.

*Professor of commercial engineering, Carnegie Institute of Technology, Pittsburgh.



With this apparatus, according to Dr. Rittman, 400 tons of heavy fuel oil from a cracking still, containing lime, yields 300 tons of cracking stock and 100 tons of real coal

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have been sold for as low as 62/100 of a cent a gallon. When, with a manufacturing cost of a few cents a gallon, it is possible to convert considerable portions of this fuel oil into gasoline, then it at once becomes obvious that the goal of the progressive refiner is to produce a maximum of gasoline and a minimum of fuel oil from a given quantity of crude oil, particularly since he receives for a gallon of fuel oil only a fraction of the price which he pays for crude petroleum.

Moreover, other conditions prevailing and developing in the Mid-Continent, point strongly to a depressed fuel oil market. Coal is cheap. Despite the cheapness of coal, however, another factor looms big over the horizon. I refer to the long distance piping of natural gas. Within the next year literally hundreds of millions of cubic feet of natural gas originating in Texas, Montana, and other states, will daily be delivered to the great fuel consuming centers of the Middle West.

Pipe lines for months have been delivering natural gas originating in Texas to Denver, together with the cities enroute. Pipe lines are now being laid to connect Texas and Kansas City, supplying cities enroute. Plans are being discussed to continue the lines to Chicago. A project, financed by another company, to pipe natural gas from Texas to Omaha, Nebraska, and other cities enroute is about to be consummated. Announcement has been made of a project to pipe natural gas from Montana to Utah and California.

It appears now that in relatively few years a large portion of the Middle West will have available natural gas at prices low enough to offer serious competition to coal, and ruinous to the petroleum refiner having large quantities of fuel oil to sell. In short, the problem of the Middle West petroleum refiner is, and very probably will continue to be, "Make more gasoline and less fuel oil from a given quantity of crude oil," and it is as a by product of this situation that the manufacture of coal from petroleum refuse is made commercial.

The quantity of gasoline required appears to be of constantly increasing proportions. With more than 30 million automobiles, the United States in 1929 will produce well in excess of 15 billion gallons of gasoline, with an annual increase of—roughly—15 per cent.

As a by product of the cracking process at the plant to which I will now refer, there is produced a refuse oil, fuel oil, considerably heavier than water, and containing considerable solid matter.

Lime is used in this particular cracking process and this lime concentrates in the refuse and constitutes a part of the solids referred to above, the balance being free carbon, etc. The problem was to recover the oil present in this refuse at a minimum cost in order to make more gasoline from the recovered oil.

A common practice is to charge this refuse to shell stills, called coking stills in the art, put a fire under the still and continue heating until only coke, with very low volatile matter content, remains.

This batch procedure requires a big investment in stills, depreciation and maintenance costs are high, and the coke must be removed manually with a variety of implements. The cost of recovering the oil is real, both with respect to investment as well as labor and maintenance.

In the present operation the refuse oil is pumped through a long continuous coil (about 3 inches inside diameter and several thousands of feet long) placed in a pipe still. The end of this heating coil leads to a chamber, from the top of which the vaporized oil is led to a condenser and recovered, and the "bottoms," while very hot and still in fluid condition, are pumped to any desired point, and, in fact, can be pumped directly into the gondola car in which shipment is to be made.

By controlling the rate of flow through the coil, as well as the furnace temperature, neither of which are difficult, one can readily control the percentage of volatile matter left in the residue.

This percentage of volatile matter left in the residue naturally will be primarily influenced by market and operating conditions. The analysis of a typical residue which congeals into an amorphous bituminous coal follows:

	Per Cent
Volatile matter	45
Fixed carbon	51
Ash (lime, etc.)	4
B.T.U. per lb. about	15600

The operation appears to be practically continuous, in that runs of two to three weeks' duration have been common. With manual labor of practically negligible proportions, since no manhandling is involved; with low investment cost as compared with coke stills; and with relatively low maintenance cost, it becomes apparent why the operation is commercial. One could almost afford to give away the coal. However, this is by no means necessary.

Large scale tests are under way and it already appears that this coal is most desirable for coking purposes to produce metallurgical coke. The reasons for this are apparent when one considers the character and low percentage of ash, together with the fact that the coal is low in sulfur.

In addition, large scale experiments are under way wherein the material is being pulverized before burning under boilers and in cement kilns; also a large boiler is being equipped with a type of rotary burner used in oil refineries. Also, as previously stated, I feel that this material might be an admirable raw product for the processes which propose to convert bituminous coal into petroleum, which petroleum in turn could by present methods be converted entirely into gasoline with small quantities of more coal, thereby creating a cycle and bringing to reality the desire of progressive petroleum technologists; i.e., to convert crude petroleum entirely into gasoline.

Henshaw Sells West Texas Properties

HOUSTON, Nov. 23.—All West Texas properties of the Henshaw Oil Corp., San Angelo, have been sold to the American Maracaibo Co., of New York, for a consideration said to approximate $3,000,000. Producing properties in Brown, Howard and Coleman counties are included. Undrilled acreage is also included in Winkler, Crockett, Ector, Coke and Brown counties, together with a wildcat block in Blaine county, Okla.

The deal includes the Howard county extension well of the Roberts-Settles deep lime area, which Henshaw recently completed for maximum exploited production of 4000 barrels daily. When the Louisiana Oil Refining Corp.'s No. 1 Settles, east offset, came in swabbing 60 barrels an hour in Sec. 6, block 32, township 2 south, the Henshaw well quit flowing Nov. 22. It probably will come back at reduced rate of flow after being revived by swabbing, a practice that has previously proved effective under similar conditions in the Howard county area.

The American Maracaibo's purchase is its second recent transaction in West Texas. About two weeks ago it purchased the previously unsold fractional royalty interests of T. J. Hendricks and wife under their Winkler county ranch.

Proceedings Published

TULSA, Nov. 26.—Proceedings of the 1928 annual convention of the Natural Gasoline Association of America will be off the press within the next week, it was announced today by A. V. Bourque, secretary. A charge of $5 per copy will be made.

The proceedings contains the annual report of the research department including a vapor pressure chart by Dr. G. G. Brown which is said to be the most complete ever prepared. A number of papers on stabilization and other technical subjects are included.

To Develop Test Code

TULSA, Nov. 26.—The Gas Testing Committee of the Natural Gasoline Association has been authorized by the board of directors to complete arrangements with the U. S. Bureau of Standards to undertake the development of a standard testing code and apparatus for field testing of the gravity of natural gases.

The Editors' Viewpoint

National Petroleum News

Another Unwarranted Attack

NOW comes another lubricating equipment manufacturer who seeks to sell his equipment to the oil industry by issuing false advertising material that defames the oil industry and its product, motor oil.

This time it is the Safety Seal Oil Co., of Chicago and New York. We are indebted to an irate oil marketer for the little four-page folder of false statements which this company is sending out.

This folder brings to light again the untrue statements of the American Fair (?) Trade Association of New York City, whose activities against the oil industry we have exposed and condemned many times. The truth does not seem to be in that so-called association, nor any desire for fair trade practices.

It was several years ago that this association made a few checks of alleged motor oil substitution around New York, presumably at the behest of an interested oil company, and applied the percentages arrived at by checking substitution on this company oil at gyp stations and others, to the total probable consumption of oil in the United States and arrived at the impressive figure of "$1,120,000,000 loss" and such conclusions as "half the lubricant used is of inferior quality to that which the buyer orders and supposes that he is paying for," and more such wild and untrue statements.

What these scare-head type of "investigators" overlooked is that most if not nearly all of the motor lubricants that are consumed in this country are distributed through oil company controlled or owned stations and highly legitimate automobile service stations, under the brand of the distributing oil company, which oil is made by the best lubricating oil refiners in the country but which brands do not happen to be advertised in the S. E. Post.

The oil marketing companies should be able to stop this unfair and untrue campaign of the Safety Seal Oil Co. at once by telling it what they think of such attacks upon their own good names.—W. C. P.

Leadership Must Be Earned

ANNOUNCEMENT of meetings of 40 different committees, preliminary to the general meetings of the American Petroleum Institute in Chicago next week, shows the extent to which the institute has built up for itself a place in the affairs of the oil industry.

These committees are all working bodies. They are all entrusted with specific tasks, the accomplishment of which is of practical benefit to the oil business as a whole.

Their members are busy men, because they are the type active in the affairs of their own companies. Some of these men have been giving much time for two years or better to this institute committee work. Much of this work is the attacking of purely technical problems, such as the oil field standardization program, study of testing methods and specifications for oil products, study of methods of combating the effects of corrosion on equipment used on producing and refining properties and so on.

The great majority of these committees are standing committees, with their personnel changing very little from time to time, with a wide participation in the work of each by the men actually concerned with the subject insured through a setup of sub-committees of the main committee. Such is a committee handling all matters relating to the mechanical handling of petroleum products by the railroads. Still others have to do with the revising of oil and gas lease forms, fire preventions for all kinds of oil properties, use of motor vehicles in the oil industry, and so on to great length.

Practical benefit is already beginning to accrue to the oil industry from the work of some of these committees as, for example, from many of the standardization committees. The value of the work of other committees will be realized within the next few years.

The quiet, continual work of these committees points to a type of leadership in oil industry affairs growing up through the institute that will serve the industry better than the kind of leadership that shouts commands from the housetops, as an outside dictator, such as has been talked of, would bring.

The authority that goes with effective leadership, for the oil industry, and through the institute and any other organization, has to be voluntarily granted by the individuals in the industry. It cannot be seized and it is doubtful if it could effectively be legislated to any individual, or group, or organization.

As the individual members of the oil industry gain confidence in the institute, through the practical work of its committees and other working organizations, they will probably grant it and its leaders a greater degree of authority which will make it an even stronger working force in the industry. This seems about the only way that the authority that must go with leadership in the oil industry can be secured.—V. B. G.

Cement Makers Cooperate

CEMENTING operations in the oil country sometimes call for extended studies of the best practices to be followed in the individual producing regions. The differences found in formations drilled call for varying practices from field to field. For example, the cementing of casing in gumbo in the Gulf Coastal region is a hard task to accomplish.

One means of dealing with the problems found in the various oil territories is to get in touch with the National Association of Manufacturers of Portland Cement. They will send a representative to any district where they are assured 30 or more people will get together to discuss cementing problems and carry on tests.

By cooperation of the oil companies and the Portland cement manufacturers more freely it should be possible to solve the problems of individual territories or regions without undue hardship to either.—P. W.

EXECUTIVES of various small companies are skyhooting around the country now on projects looking to mergers, it is rumored. The smaller units of the industry are being seized with the fever the same as the large ones. If the price of oil should be raised 50 cents most of the talk would die away. Heads of small companies prefer to retain their companies as they are. Many of them founded the company, nursed it along through good and bad times and felt that their existence was inseparably linked with that of the company. The past two years have been hard on small companies; they have either made no profit or have lost money, in many cases. The outlook is not good for that 50-cent advance in oil prices, although a smaller one might be made.

Many of these merger rumors have quite weak foundations. The head of one company asks the head of another to talk things over with him. When the values and the liabilities are all put down on paper, agreement on the basis of the trade is difficult. Usually, the discussion ends right there. Most mergers are put over after one company has accumulated enough stock in the other, by open market purchase or by quietly buying the stock of an important holder, to enable it to have considerable voice in the company sought.

* * *

Dan J. Moran has arrived in Ponca City and entered upon his duties as president of the Marland Oil Co. About the time that he got there the resignations of three vice presidents were announced. Chester H. Westfall, in charge of public relations and in addition president of the Marland Oil Co. of Mexico, was one. George G. Shallenberger, who has been in charge of natural gas and natural gasoline for the company, was another. He has been with the Marland interests since 1916. Mr. Westfall's period of service is about 10 years. He was once a newspaper reporter and later secretary to Governor R. L. Williams, of Oklahoma. The third executive to resign was George Marland, foster son of E. W. Marland. He is an expert on pipe lines.

The first appointment announced under the new administration was that of William W. Bruce, to be secretary of the company. Mr. Bruce, like Mr. Moran, was vice president of the Texas Corp.

Few of the men who were executive officers of the Marland Oil Co. at the first of the year are now there. Dr. W. A. J. M. van der Gracht, J. S. Alcorn, J. K. Cleary, Seward R. Sheldon, W. H. McFadden, E. W. Marland, who is still, however, a director and member of the executive committee; S. H. Collins, and latterly, Messrs. Westfall and Shallenberger, have gone. Many others, not directors, but high in the ranks of the company, including directing heads of subsidiary companies, left. Few companies have ever had such a sweeping change in executive personnel.

During the recent International Petroleum Exposition, John H. Wiggins was persuaded to have his picture made. Mr. Wiggins is consulting engineer to the Chicago Bridge & Iron Co. and is an authority on evaporation losses and how to prevent them. What we started to explain about him, though, is that he is celebrated in Tulsa as a vocalist. He recently was heard over station KVOO in several baritone solos

Death of Charles P. Baker, for years an operator in the Duncan district of southern Oklahoma, occurred Nov. 8. Burial was at Holden, Mo. He owned a number of leases in the Duncan area, most of which are operated by the Wirt Franklin Petroleum Corp.

* * *

Judge John J. Shea, pioneer oil attorney, died Nov. 14 after he had been stricken by paralysis. He was 68 years old. An authority on tax matters, Judge Shea represented the Mid-Continent Oil & Gas association on a number of occasions in Washington hearings and some time ago was made an honorary member of the association in recognition of his services. Judge Shea came to Bartlesville from Iowa in 1905 and after serving one year as district judge, practiced law in that city until 1917 when he came to Tulsa. He is survived by one son and four daughters.

* * *

J. T. Richards, district geologist in the Seminole area for the Gypsy Oil Co., has gone to Venezuela for the Gulf interests. He will return early in 1929. In his absence, C. R. Clark is carrying on his work.

* * *

The many friends of Thomas S. Loffland, Tulsa, are extending sympathy at the recent death of his wife. Mr. Loffland is a member of the large drilling contracting firm Loffland Brothers.

* * *

Inquiry is made around over the country from time to time of the whereabouts of Col. H. L. Wood, one of the most colorful writers ever developed in the oil industry. The colonel is exercising his talents in Shawnee, Okla., on behalf of a daily newspaper there. The sharpness of his critical faculties has not been dulled by the years and he finds much to say about proration, cooperative agreements, conservation and other devilish contrivances which the industry employs in the Seminole area, in Shawnee territory. The colonel and his wide hat, Montana type, are regular visitors to the active fields of the district.

Completions in St. Louis Extension Keep Production About Even

By John Power
N. P. N. STAFF WRITER

TULSA, Nov. 24

THE addition of another Wilcox sand producer to the western part of the St. Louis pool kept production from this area well up the mark it has been making since the discovery of the new pay streak. Pure Oil Co. No. 1 Thomas, in the SE NE NE of 26-7N-4E a west offset to the discovery well, came in during the week for about 200 barrels per hour. Both this well, and the Magnolia well which offsets it to the south, have been flowing their production and going dead by stages for several days.

Both of them are to be put on the air lift in a few days. The Wilcox sand was encountered in the Pure well at 4,251, and has so far been drilled to 4,273 feet.

A short north extension to this part of the St. Louis pool was afforded by the completion of the Sinclair Oil & Gas Co. No. 12 Blandin as a producer in the Wilcox. The well, in the SE SW SW of 24-7-4, about a quarter mile north and east of the three big wells in the new western pay zone, is swabbing about 50 barrels per hour from the sand at 4268-94. A location west of this new well the same company's No. 13 Blandin is a dry hole in the Wilcox, with 500 feet of salt water from the sand encountered at 4193, and drilled to 4214.

Some other completions in the St. Louis pool were not so successful, however. To the southeast of the pool the Twin State No. 1 Sexton, in the NW of 32-7-5, has 1,200 feet of water while drilling in the Simpson at 4360. Still farther east, in the NW NE SE of 35-7-5, the Tomlinson et al. No. 1 Whizunhunt, has a hole full of water in the Wilcox from 4582 to 4590.

In the SE NE of 20-7-5, due east of the heart of the field, and an east offset to the Mid-Continent No. 1 Guinn, which has made close to 2,000 barrels daily average for several weeks, the same company No. 2 Guinn is a failure in the Wilcox. A hole full of water rewarded the drilling of the sand from 4372-80.

An inside location produced a small well, the Barnsdall Oil Co. No. 1 Stahl, in the NW SW NE of 30-7-5, is swabbing about 600 barrels per day from the sand topped at 4281. A comparative table of production by leases in the St. Louis Wilcox sand area is given.

The report on Seminole district production by companies and leases for the week ending Nov. 21 did not reach Cleveland in time to carry in this issue. Complete figures for the week ending on that date will be incorporated in the Seminole district production table carried in next week's issue.

Of the members of the Seminole group proper, the Mission pool, is of course the most active. There are some 105 active locations in the field. Most of these are drilling wells, the completion of which will not take place until Feb. 15.

However, a new producer was added to the list in the field during the week, when the Shell Petroleum Corp. completed its No. 1 Herndon, in the NW NE of 7-8N-6E. It is good, in its present condition for about 1,000 barrels daily, in the Wilcox with a total depth of 4291. The well, which is about the heart of the present field, is a southeast offset to the Gypsy Oil Co. No. 1 Barkus, the best well in the field to date.

In the as yet unnamed field of Twp. 7N-7E, in which the Mid-Continent Oil & Gas Co. No. 1 Smith, in Sec. 5 is the discovery well, there is also a fair amount of activity. The completion of several dry holes, and one extremely light well offsetting the discovery well have done much, however, to spread doubt as to the possibilities of the field.

The Gypsy Oil Co. No. 1 Payne, in the NW NE NE of 5-7-7, offsetting the discovery well, had water in the top of the Wilcox from 4424-28. Drilled to 4433, and swabbed down, 2,500 feet of oil rose in the hole. The next day the well swabbed 110 barrels of oil and 10 barrels of water. North of these wells, in Secs. 32 and 33, Twp. 8-7, the Shell has dry holes in its Nos. 1 and 2, Jeffries. The former had a hole full of water in the Wilcox from 4475 to 4508, and the latter is running very low, drilling at 4510 with only a small show of oil. No. 1 is located in the NE SE SW of Sec. 33, and No. 2 in the SE SW of Sec. 32.

In Pottawatomie county, west of Seminole, where a great deal of action has been underway during the past few months, and which contains the St. Louis pool in Twp. 7-5, the past week brought forth but little news. The Misener sand pool, in western 8-5, had no new wells to report, although water made its appearance in the big well of the Amerada Petroleum Corp. in 1-8-4. This morning's gage on the well put the production at about 3,800 barrels, with some 5 per cent water.

Farther north, but still in "Pott" county, the well drilled by the Atlantic Oil Producing Co. on Gypsy acreage is indicative of production possibilities in the Hunton lime. Located in the center of the SE NE NE of 13-9-4, the well made a flow of 86 barrels from the Hunton, encountered at 4206, and drilled to 4222. In its present shape it is estimated that the well is good for about 200 barrels daily.

Southeast of this, in the SE NW of 30-9-5, the Magnolia has a good showing of oil in what is believed to be the top of the Sylvan shale. The test, the No. 1 Germany, is drilling at 4202, with 1500 feet of oil, and 100 feet of water in the hole.

In the so-called naval reserve tracts, in Osage county, the Gypsy-Marland interests wildcat which has been held to less than 100 barrels daily for months, looks good for about 1,000

Company	Lease	Wells	Prod. Nov. 23	Prod. Nov. 16
Barnsdall	Stahl	2	2,028	985
Gypsy-Sinclair	Stahl	5	12,128	14,376
Phillips	Stahl	2	1,388	3,537
Sinclair	Nadash	1	295	408
Magnolia	Hembree	4	7,718	9,198
Magnolia	H. E. Youts	5	6,817	6,935
Magnolia	C. A. Youts	1	800	742
Magnolia	T. Fyke "A"	1	109	14
Magnolia	T. Fyke "B"	1	4,308	1,236
Magnolia	Cherry	1	2,471	4,980
Slick	Hembree	4	15,750	16,285
Slick	Youts	2	1,800	520
Mid-Continent	Guinn	1	150	1,580
Pure	Thomas	1	4,085	.....
Independent	Youts	8	21,240	21,650
Prairie	Wolfe	4	3,845	3,205
Texas Co.	Cherry	1	4,500	3,670
		44	89,432	89,238

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Boston	-	Cincinnati	-	Los Angeles	-	Cleveland	-	San Francisco	-	Philadelphia

barrels a day. It is the No. 1 Mary Agnes, in the NE SW of 22-24N-7E. There are three offsets to the new well drilling.

Kansas has very little to report for the week. The offsets to the Gypsy-Marland-Bu-Vi-Bar well in Sedgwick county are either underreaming, or preparing to drill in, but as yet none of the three have penetrated the sand. The Phillips Petroleum Co. No. 1 Schutts, the Ellis county wildcat test which showed for a well a couple of weeks ago, is doing about 12 barrels per hour from the sand at 3573-75. The well is partially pinched in to await the erection of tankage.

The old Dilworth pool, in northern Kay county, Okla., seems to have come back to life. The Carter Oil Co., in its No. 1 Lambin, NE NE of 19-21N-1E, made 234 barrels in the first 14 hours, after topping the pay in the Wilcox at 3,341 and drilling to 3,347. One and one-half million cubic feet of gas per day is with the oil, which is 42 degrees A.P.I. gravity. The Dilworth pool, discovered as a gas field in 1911, merges with the Blackwell field, the main body of which lies to the south. Oil in really paying quantities was discovered in the Blackwell field in 1914.

A new well in the Vernon pool of northern Kay county indicates renewed activity in this old pool. Carter Oil Co., in its No. 1 Lambdin, NE NE of 19-29N-1E has a well good for about 500 barrels. After topping the pay in the Wilcox at 3341 feet and drilling to 3347 the well made 234 barrels in 14 hours and gas at the rate of one and one-half million feet per day. Development of the Vernon pool has been slow, the discovery of production having been made by The Marland Oil Co., in 1925.

New Wells Draw Attention Away From Burning Santa Fe Springs Well

By William E. Green
N. P. N. STAFF WRITER

LOS ANGELES, Nov. 24

SIX new wells at Santa Fe Springs, 10 at Long Beach and one light gravity oil producer in the old Rosecrans field attracted some attention during the past week away from the burning well at Santa Fe Springs and the general gas conservation movement.

In fact, operators in Southern California are burning the midnight oil these days, and still they wonder why the days are not longer.

Of the six wells completed at Santa Fe Springs, five were placed on production in the deep Buckbee zone, while one is now flowing from the intermediate or Star zone. Star Petroleum Co. drilled into the Buckbee, cored a gray sand containing water and then plugged back to 5535 feet and cemented through perforations at 5638 feet for 4600 barrels of oil and about 30,000,000 cubic feet of gas in the Star zone. Shell Co. placed Slusher 12 back on production at 5775 feet after drilling into bottom water just below the Buckbee zone and cemented at 5744 feet for 4300 barrels. This well is producing from only 31 feet of Buckbee sand.

So far just one well has penetrated more than 150 feet into the Buckbee zone. Wilshire Oil Co. completed its Cecelia 1-B this week for 3500 barrels at 5797 feet with casing cemented at 5609 feet. These depths are estimated as Wilshire officials refuse to exchange information with other companies.

According to depths estimated, this well is producing from 188 feet of oil zone, but the depths here given are probably not absolutely accurate.

Union Oil's Bell 30 furnished 4200 barrels initial production at 5746 feet, producing from 124 feet of sand. Universal Consolidated's Blanchard 7 was good for 4000 barrels at 5746 feet from only 101 feet of sand. George F. Getty's No. 8 came in for 4600 barrels at 5765 feet from 127 feet of zone. Shell's Slusher 12 has already been mentioned.

There is not quite so much optimism in the field this week as to a very large production from Santa Fe Springs. There is a bare possibility that some of the wells now drilling around the edges of the field will miss the two sands entirely, or the sands will be so thin they will make poor producers.

There is now a strong possibility that the two sands uncovered will show a sharp and quick decline when a number of wells are pulling on the two comparatively thin zones. In California an oil sand not more than 100 to 125 feet in thickness is considered a thin sand. But there is the great possibility that still another oil zone will be found below the water sand already cored in at least two deep wells approximately 100 to 125 feet from the top of the Buckbee sand. This last deep sand might prove to be greater than any previous zone, if the sand is present as thought to be.

Twenty wells are expected to be placed on production at Santa Fe Springs during the coming two weeks. That number of holes have drilled to top of Buckbee or Star zones and cemented or have cored into one or the other of the two zones. Eleven wells are now producing from the deeper zones and these wells have a daily production slightly exceeding 40,000 barrels. Actively drilling wells now number 209, not to mention 5 redrilling jobs and 6 deepening. There are 29 operations in the field from locations to rigging up.

The Bellview burning well at Santa Fe Springs continues to burn as fiercely as ever, but a tunnel was started early in week that is expected to reach the casing early next week about 35 feet below the surface when pipe will be tapped into the casing and with the aid of compressors, the gas and oil will be pulled through the tunnel, thus relieving the pressure at the mouth so the well can be controlled.

Operators named L. B. Little, Frank Hill and Harry Maddren on a committee to supervise the fire fighting and the committee selected C. W. Eckles, engineer with Union Oil, to have immediate charge of the work. The tunnel plan was decided upon and work started immediately. Interested oil operators raised a fund for expenses and the money will be paid back with oil from the well after the fire is out, according to agreement with officials of the Bellview.

Experts this week decided that the burning well is making a lot of oil, estimates ranging from 5000 to 10,000 barrels. The gas output is great, probably as high as 40,000,000 to 50,000,000 cubic feet. But the experts explain that the volume is great and that the conditions lend to a perfect combustion, thus explaining the absence of much smoke.

OPERATIONS at Long Beach are progressing slowly with 10 new wells the past week, furnishing a total initial production of about 10,000 barrels. This new production is at least assisting to hold the production curve fairly steady for a time, although old wells are showing steady declines, with some of them making considerable water, especially where edge conditions apply. Approximately 160 wells are still drilling in the field, and the wells are making considerable gas.

In fact, there are about 125,000,000 cubic feet going to waste daily in this

field, although the gas is run through natural gasoline plants before being released in the air. Plans are under way to ask the operators to agree to pinch the wells in an effort to reduce the gas waste.

Barnsdall this week surprised the other operators when O'Dea 13 was recompleted at Rosecrans after drilling deeper to 5404 feet for slightly better than 2000 barrels of 38 gravity oil from the old Zins zone. A portion of the Rosecrans field has been productive of high gravity oil for some years, but the wells usually do not stand up long, showing marked declines. This well had been on production at 4979 feet and was cleaned out, redrilled and carried to 5404 feet, with casing being cemented through perforations at 5110 feet.

There were no unusual developments at Kettleman Hills the past week. Milham's discovery well is still making around 4000 barrels of 60 gravity oil through four overloaded gas traps. A fifth gas trap is being added to take part of the overload and it is then thought that the production might increase.

Standard has made two locations offsetting the producer, and two other locations at least a mile away have been made.

There were new wells completed at Elwood, the new field in Santa Barbara county, but several wells are drilling at a point that is near where the core barrel should find an oil sand. The producers are holding up well and during the week, Standard loaded a tanker through the deep water line from the storage tanks on the lease.

Proration Is Extended in West Texas

HOUSTON, Nov. 22

EXTENSION of the Yates field, Pecos county, prorating period until July 1, 1929, foreshadows continued rationalization of crude oil production in other West Texas flush areas.

Operators in that field, at a meeting in Fort Worth, Nov. 20, recommended to the Railroad Commission of Texas that it extend the present prorating order six months from its expiration date of Jan. 1, 1929.

Winkler county operators voted in September, favoring extension of their prorating period six months from Nov. 5, or until May 5, 1929; the railroad commission approving.

The Howard-Glasscock prorating order, affecting Roberts-Settles deep lime production, expires Feb. 15, 1929, unless later extended by the railroad commission.

Other West Texas producing areas are not classified as flush and, therefore, do not come under prorating practice.

Allowable production in West Texas prorated fields is divided, at present, as follows: Yates, 72,500 barrels daily; Winkler, 150,000 barrels daily; Howard-Glasscock, 30,000 barrels daily; total, 252,000 barrels daily.

Production in West Texas fields not under proration varies between 85,000 and 90,000 barrels daily, giving the Permian salt basin region present total yields of about 340,000 barrels daily.

Yates field average potential production, as recognized in the prorating period of Nov. 16-30, inclusive reached a new high level of 2,184,442 barrels. Average potential production is figured on total potential of all wells on individual 100-acre tracts divided by the number of wells on the tract.

Total potential of the 278 wells producing in Yates field, Nov. 16, was 4,191,732 barrels, based on one-hour gage tests multiplied by 24 to reach estimates of daily open flow maximums.

Winkler county's total potential, as recognized in the Nov. 15 prorating yardstick, was 2,743,221 barrels daily, from 409 producing wells.

As previously set out in these columns, rated potentials reached on hourly gage tests do not represent what the wells actually could produce under open flow practice but merely serve for prorating purposes.

Howard-Glasscock county potential of 44,380 barrels, from 28 wells in the 3000-foot pay and seven wells at the 2500-foot level, represents a more accurate appraisal.

Total recovery to date from wells in the Howard-Glasscock area has been less than 2,000,000 barrels, because of their being shut in at completion until they were opened for prorating, Aug. 15.

Late figures on the Winkler area, which first went under prorating practice last May, show total production to Nov. 1 of 52,147,666 barrels.

Yates field total production to date approximates 17,000,000 barrels, reflecting the relatively low allowable runs under terms of prorating in the Pecos county area.

New Field Extends Winkler Trend; 110 Miles Long

HOUSTON, Nov. 23

THE production trend northwest and southeast of Winkler development, in the Permian salt basin region of west Texas and southeastern New Mexico, was lengthened again this week by a discovery well in northern Pecos county, Texas.

From the location of the new Pecos county well to the Gypsy Oil Co.'s significant test in 34-21S-36E, Lea county, New Mexico, is a distance of approximately 110 miles.

With some kind of production proved at both ends of the trend, and flush development long since under way in the intermediate Winkler area, it has become evident that a number of future oil fields are in the making.

The south end discovery well was drilled by the Pecos Valley Oil Co., on fee land, in the center of the west quarter of sec. 22, H&GN block 10, about 20 miles northeast of Fort Stockton, the nearest railroad point on the Kansas City, Mexico & Orient railroad. The well was estimated good for upwards of 100 barrels daily of 37 A. P. I. gravity oil at 1626-1628 feet.

It is considered to be on a separate trend from that on which is located the phenomenal Yates shallow field of eastern Pecos county, about 25 miles away.

Between the Gypsy well and northern Winkler county, Texas, development, the structurally low Joyner test of the Skelly Oil Co. failed to hold up to first expectations after testing. The well, in 26-25S-36E, Lea county, made 125 barrels of oil, accompanied by water, in four trips of the swab.

The New Mexico wells mentioned, whatever their outcome, have indicated the trend of the subsurface lime ridge into Lea county under conditions that foreshadow eventual development of large quantities of crude oil along it.

Elevation of the Pecos Valley test is 2501 feet above sea level as compared with 2435 for the Rowan & Tong and 2402 feet for the Kimberlin & Cromwell tests.

Within that area virtually all leaseholds have been taken up by principal west Texas operators, in 80-acre, 160-acre and larger tracts. Eighty-acre and 160-acre leaseholds, however, predominate. This will mean that in case an important field is developed west Texas operators will again face a task in rationalizing development and prorating production.

Principal operators represented in the area are Magnolia Petroleum Co., Sun Oil Co., Roxana Petroleum Corp., Southern Crude Oil Purchasing Co., Prairie Oil & Gas Co., Humble Oil & Refining Co., Pure Oil Co., Marland Production Co., the California Co., Amerada Petroleum Corp., Mid-Continent Petroleum Corp., Kimberlin & Cromwell, Rowan & Tong, Trans-Pecos Oil Co., and Dixie Oil Co., Inc., the last mentioned direct producing subsidiary of the Standard Oil Co. of Indiana.

Completions in Oklahoma and Kansas, Week Ended November 24, 1928

OKLAHOMA

Caddo County

Company	Well No.	Location	Depth	Init. Prod.
Ray	1	SW NW SW 4-5-9 W	1865-2446	10

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Bengal	6	SEc NW SW 17-17-7 E	2713-2754	250
Pine et al	1	SWc NE SE 20-17-7 E	2786-2796	24
Pine et al	2	NWc NE SE 20-17-7 E	2762-2800	75
Twin State	4	NE SW NE 20-17-7 E	2801-2846	425
Wilson et al	1	NEc SW 25-17-8 E	2671-2726	1.5M
Henry-Avers	1	SWc SE SE 12-17-10 E	2275-2278	OWD 2M
Tim Oil Co	1	C S½ SW 2-17-11 E	2011-2018	20
Wilson	3	NWc NE 1-15-10 E	2626-2696	40
Collins	1	NWc SE NE SE 3-17-11 E	T.D. 2017	Dry
Skelly	4	SW SE SW 15-14-8 E	T.D. 3375	OWD Dry

Comanche County

Company	Well No.	Location	Depth	Init. Prod.
Hrbacek-Korthaus	1	C NE SW 14-1-12 W	T.D. 4055	Dry

Grady County

Company	Well No.	Location	Depth	Init. Prod.
Meridian	2	SWc 25-5-8 W	2174-2385	11M

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Ewing et al	1	SWc SE NW 27-28-2 E	T.D. 1020	Dry

Logan County

Company	Well No.	Location	Depth	Init. Prod.
Franklin et al	1	NWc 21-18-4 W	T.D. 6255	Dry

Marshall County

Company	Well No.	Location	Depth	Init. Prod.
Smith	7	SWc NW SW NE 24-5-5 E	652-669	30

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Selby	7	SWc 31-15-15 E	620-665	5
Mills et al	1	NWc NE 19-13-19 E	768-800	12M
Cherokee Public	1	SEc NE NE SW 10-15-17 E	T.D. 1380	Dry
Paul et al	4	SWc NW SW SW 17-14-17 E	T.D. 1481	Dry
Barber	1	CWL SW NE 8-13-16 E	T.D. 2050	Dry
Blackwood et al	1	NWc SE NE 32-13-19 E	T.D. 2075	Dry

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Savoie et al	1	C SE SW 11-11-11 E	T.D. 2750	Dry
McCullough	1	NEc NW NE 29-10-10 E	T.D. 4241	Dry
Devonian	4	NEc SW NE 11-10-11 E	1561-1576	10
Umburn	3	NW SE NE 11-10-11 E	1552-2018	100
Atlantic	1	SWc NW SW 12-10-11 E	2029-2034	50

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Texas	3	NEc SE SE 8-15-14 E	1877-1896	10M
McInturff	2	CSL NW NE 8-13-14 E	1284-1303	5
Rebold	10	CNL NW SE 22-13-12 E	1745-1760	15
Denver Prod	2	C NE NE 32-13-11 E	T.D. 3435	OWD Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Superior	2	NEC SW NE NW 8-22-11 E	T.D. 1723	Dry
Berlin	10	SEc NE SE SW 20-29-9 E	T.D. 1503	8
Peters	6	CSL NW 26-25-9 E	2140-2174	250
Silurian	4	SW NE SE 12-23-11 E	1488-1540	12
Moore-Ohio Osage	2	NEc NW 16-21-9 E	2040-2073	50
Moore-Ohio Osage	18	SWc NW SW 9-21-9 E	284-315	30

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Admason	2	SEc SW SE 24-21-7 E	2670-2710	50
Black et al	5	CSL SE NE 6-20-8 E	T.D. 2810	Dry

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
American	2	SW NW SE 27-5-6 E	T.D. 1924	Dry
Westheimer-Daube	6	NWc SE 19-5-8 E	2582-2646	600
Roxana	1	SW SE NW 32-5-7 E	2140-2142	17M
Superior	2	NW SE NW 32-5-5 E	2523-2664	120

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Texas et al	1	SW NW NW 25-7-4 E	4230-4260	2600
McCullough	5	SW SE NE 25-7-4 E	4196-4198	847
Sinclair	7	SW NW SW 19-7-5 E	4140-4185	360
Magnolia	4	NW NE SW 19-7-5 E	4145-4255	404
Gypsy	7	NE SE NE 30-7-5 E	4195-4332	72
Gypsy	3	SW SE NE 30-7-5 E	5355-4494	70
Gypsy	1	NW SE NW 29-7-5 E	4470-4547	120
Independent et al	1	SWc NE 7-9-5 E	T.D. 4362	Dry
Sinclair	1	SW NW NW 21-7-5 E	T.D. 4765	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
I. T. I. O.	1	SEc NW 26-8-6 E	T.D. 5055	Dry
Empire	1	SW NW SE 17-7-6 E	T.D. 4605	Dry
Carter	3	NEc NW 11-7-6 E	T.D. 4613	Dry
Louisiana	4	SWc SE SW SW 8-5-8 E	2611-2685	50
Gilcrease	2	SW NW NW 17-5-8 E	2620-2690	485
Magnolia	2	NE SW NW 17-5-8 E	2606-2655	330
I. T. I. O.	3	NW SE SW 18-5-8 E	2499-2516	125
Slick-Skelly	1	SEc NW 6-9-6 E	4332-4370	3115
Magnolia	8	NWc NE 10-8-6 E	4450-4503	100

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Snodgrass	1	SWc NE NW 34-1-8 W	T.D. 1700	25
Medlin et al	4	SEc NW NW NE 34-1-8 W	1676-1682	15
Randle-Muse	1	SEc SW 1-2-8 W	T.D. 2464	Dry
Saterwood-Hart	1	NWc 9-1-8 W	T.D. 2503	Dry

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Cornelius	1	CEL NW NE 32-19-12 E	685-730	3

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Gillett	6	NEc NW NW SE 25-17-16 E	T.D. 1448	Dry

KANSAS

Barber County

Company	Well No.	Location	Depth	Init. Prod.
Shaffer	2	C NE SE 11-33-13 W	4528-4556	40M

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Empire	6	SWc SE 22-27-5 E	2720-2751	385
Empire	2	SE NW SE 34-27-5 E	2696-2715	75
Empire	4	NE SW SE 22-27-5 E	2726-2767	317
Empire	1	NE SE SW 22-27-5 E	2738-2751	15
Empire et al	2	NE SE NW 6-27-6 E	2718-2746	250
Garden et al	4	NWc SW NE 6-27-6 E	2705-2738	300
Dixie	2	NE SW SE 28-27-6 E	3048-3058	20
Empire	1	NW SE NW 27-26-7 E	T.D. 3135	OWD Dry
Empire	3	NW SE NW 27-27-5 E	T.D. 2775	Dry
Empire	1	NW SW SW 15-27-6 E	T.D. 3110	Dry
Phillips	6	NWc 13-27-7 E	T.D. 2688	Dry
Galbreath et al	1	SWc 26-25-4 E	T.D. 800	Dry

Clark County

Company	Well No.	Location	Depth	Init. Prod.
Watchorn	3	CWL NW NW 21-32-21 W	5443-5475	12M

Coffee County

Company	Well No.	Location	Depth	Init. Prod.
Ellis et al	1	SEc NE 1-23-14 E	1200-1255	3M

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Herron	1	SWc NE 36-30-6 E	2891-2901	40
Trees	3	NW SE NE 21-31-4 E	2400-2411	30
Pyle-Sutter et al	1	SW SE SW 21-30-3 E	T.D. 3564	Dry
Vernon-Roxana	1	SE NW NE 6-30-4 E	T.D. 3084	Dry
Shawver et al	1	SEc NW 12-30-4 E	T.D. 2818	Dry

Elk County

Company	Well No.	Location	Depth	Init. Prod.
Benge-Bandeventer	1	SWc NW 24-28-11 E	T.D. 1435	Dry
Minnehoma et al	3	SW NW SW 3-31-8 E	1973-1975	750
Derby	1	SW NW SW 4-31-10 E	1568-1578	20
Elk	1	NE SE NW 9-30-9 E	2482-2507	50
Minnehoma	2	NWc SW 3-31-8 E	1918-1932	250
Letteral et al	1	NWc NE SW SW 10-31-10 E	1977-2011	200

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Amerada	4	NW NE SW 29-22-13 E	1669-1701	50
Larobb	1	NE NW SW 1-25-8 E	T.D. 2385	Dry
McCullough et al	1	SW SE NW 13-27-11 E	T.D. 1839	Dry
Polhamus et al	1	NE SE NE 24-24-8 E	T.D. 2400	Dry
Chisler et al	2	CEL SE NW 19-24-11 E	T.D. 2005	Dry

Jackson County

Company	Well No.	Location	Depth	Init. Prod.
Smith et al	1	NEc NW 3-8-14 E	T.D. 2953	Dry

Lyon County

Company	Well No.	Location	Depth	Init. Prod.
Simmons	1	SEc NW 35-21-11 E	T.D. 2095	Dry

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Empire	1	NE SE NW 32-21-5 E	T.D. 2425	Dry
Rosenthal et al	1	NW SW SW 13-17-3 E	T.D. 2547	Dry
Givens et al	2	SEc NE 14-17-4 E	2340-2380	75
Johnson et al	1	NE NW SE 14-17-4 E	2311-2370	100
Phillips	1	SW NE SE 22-17-4 E	2369-2409	75

McPherson County

Company	Well No.	Location	Depth	Init. Prod.
Texas	1	NW NE NW 32-18-2 W	2966-2972	7¼M

Russell County

Company	Well No.	Location	Depth	Init. Prod.
Mid-West Expl	13	SE SW SE 20-11-15 W	3141-3178	40
Liggett et al	1	SE NE SE 8-11-15 W	T.D. 2433	Dry

Riley County

Company	Well No.	Location	Depth	Init. Prod.
Wilson	.	C W½ 4-11-8 E	T.D. 2310	Dry

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Wentz	1	SE NE NW 23-34-2 W	T.D. 4805	Dry
Roxana	3	SWc NE SW 14-32-2 E	1608-1643	140

Wilson County

Company	Well No.	Location	Depth	Init. Prod.
Thompson et al	1	SWc NE 21-27-14 E	T.D. 960	Dry
Smalley et al	1	SW SE NW 13-25-13 E	T.D. 1543	Dry

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended November 24, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Devonian	1-Myer	NWc SE 19-5-3 W
Westheimer	2-Dixon	NWc SW 18-1-3 W OWD
Magnoila	2-Gill	NE SE SE 23-1-3 W

Creek County

Company	Well No. Farm	Location
Gled	1-Crawford	C SE NW 28-19-9 E
Dixie Drlg. et al	1-Roberts	NEc SE 30-17-9 E
Central Comm	1-Hay	NEc NW SW 10-17-10
Freeman	1-Porter	SEc NE 23-19-7 E
Bengal	8-Tiger	NW SE SW 17-17-7 E

Garvin County

Company	Well No. Farm	Location
Magnolia	7-Harris	NWc SW NW 16-1-3 W OWD

Grady County

Company	Well No. Farm	Location
Champlin	1-Kerans	NEc 23-4-8 W
Okla. Gas Utilities	6-Chandler	NEc SE SE 27-5-8 W

Grant County

Company	Well No. Farm	Location
Boucher et al	1-Nelson	SWc SE 1-27-3 W
Lario	1-Connell	NWc 24-28-3 W

Kay County

Company	Well No. Farm	Location
Ingram-Wilson	2-School Land	NWc NE SE 36-28-1 W
Harold Pet	2-Case	SWc 4-27-1 W OWD
Ingram-Wilson	2-Booley	NWc SE NE SW 14-27-1 E
Nickols-Riggs	1-Henkle	SWc NW NW 3-26-3 E

Kiowa County

Company	Well No. Farm	Location
Sloan et al	1-Sloan	NEc 31-6-14 W

Lincoln County

Company	Well No. Farm	Location
Wilcox	2-Angee	SW SE SW 35-14-6 E
Carter	1-McBride	SWc NE 31-17-5 E

Major County

Company	Well No. Farm	Location
Keller et al	1-Horton	C NE NE 23-20-14 W

Muskogee County

Company	Well No. Farm	Location
Summers et al	1-Howard	NEc NW NW NW 29-15-16 E
Haynes et al	1-Crittendon	SWc NE 6-14-19 E

Okfuskee County

Company	Well No. Farm	Location
McMahon et al	2-Hall	SWc SE NE 29-12-10 E
Champlin	1-Jacobs	NWc SW SE 15-11-11 E OWD
Champlin	1-Washington	SWc NW SE 15-11-11 E OWD
Magnolia	1-Tiger	NWc NE 25-11-10 E

Okmulgee County

Company	Well No. Farm	Location
Papoose	20-Osborn	NWc SE SE 21-15-14 E OWD

Osage County

Company	Well No. Farm	Location
Lewis Prod. et al	1....	SEc 15-26-6 E
Stanley	3....	SWc NW SE 36-22-8 E
Peters Pet	1....	NE SE SE 8-21-9 E

Pawnee County

Company	Well No. Farm	Location
Superior	1-Highbee	CEL SW SW 28-20-9 E

Payne County

Company	Well No. Farm	Location
Texas	1-Cullison	NEc NW 5-17-5 E
Texas	2-Cardin	SWc SE 32-18-5 E

(Continued on Page 43)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended November 24, 1928

(Continued from Page 42)

Company	Well No. Farm	Location	Survey
Pontotoc County			
Westheimer-Daube	8-Wade	SE NW SE 19-5-8 E	
LaSalle et al	2-Mole	NWc SE SE SE 30-5-5 E	
Westheimer-Daube	1-Harner	NEc NW 12-4-7 E	
Westheimer-Daube	1-Busby	NWc 4-4-8 E	
Pottawatomie County			
Sinclair	1-Lewis	NW SW SW 6-8-5 E	
Independent	9-Knapp	NWc NE 8-9-5 E	
Sinclair	5-Bellars	SW NW NE 19-8-5 E	
Phillips	1-Wallace	SW NW SW 17-8-5 E	
Skelly-Margay	1-Linger	SW NW NE 18-8-5 E	
Magnolia	2-Billington	NW NE SW 8-8-5 E	
Magnolia	1-Billington	NWc SW 8-8-5 E	
Texas	1-Calvin	NEc SE7-8-5 E	
Pure	1-Wiley	SEc NW 7-8-5 E	
Gypsy	2-Bourassa	NEc 7-8-5 E	
Phillips	2-Keenan	SWc SE 6-8-5 E	
Blackwell	1-Lewis	SWc NE 24-7-4 E OWD	
Tidal	3-Smith	NE SW SE 26-7-4 E	
Magnolia	4-Cherry	CNL SE NE 26-7-4 E	
Magnolia	3-Cherry	NWc NE SW NE 26-7-4 E	
Interocean	2-Coley	SE NE SE 24-7-4 E	
Magnolia	2-Fyke	SW NW SE 20-7-5 E	
Seminole County			
Sinclair	5-Nakotche	SW NE SW 18-5-8 E	
Red Bank	3-Sango	SW NE NE 1-9-5 E	
Magnolia	1-Carr	NEc SW 30-9-6 E	
Gypsy	1-Cozard	SWc 27-7-6 E	
Slick	2-Wood	NW NE SW 26-7-6 E	
Mid-Continent	3-Harjo	NEc 14-5-7 E	
Mid-Continent	2-Harjo	NE SE NE 14-5-7 E OWD	
Sequoyah County			
Sequoyah	2-Powell	C SE NW 33-11-25 E	
Stephens County			
Roxana	4-Cook	NWc NE SW 30-1-8 W OWD	
Pace et al	9-Wilson	SEc NW SE NE 12-2-8 W	
Heydrick et al	1-Pool	NWc SW SW SW 35-1-8 W OWD	
Maer-Stanforth	1-Helder	CNL 10-2-8 W	
Amer. Pipe Line	3-Nigh	NWc SE NW 34-1-8 W	
Bundy-Denton	1-Stephens	NEc SW 16-1-5 W	
Magnolia	1-West	SEc SW 33-2-5 W	
Woods County			
Bu Vi Bar et al	1	SEc SW 10-25-15 W	
KANSAS			
Butler County			
Empire	4-Sherrock	NWc SE 27-27-5 E	
Empire	5-Sherrock	NEc SW 27-27-5 E	
Blue Stem	5-Doughty	C NW SW 5-27-6 E	
Cowley County			
Hull	18-Kukuk	NE SE NE 24-32-4 E	
Broer et al	1-Conrad	NE NW SW 35-31-6 E	
Lewis Prod	1-Conrad	NE NW SW 30-31-6 E	
Shawver	2-Beard	SW SE NE 17-34-3 E	
Kentucky Nitro. & Oxyg.	1-Melick	CNL SE SW 13-34-6 E	
Wakefield et al	1-Osborne	NWc NE 18-30-5 E	
Dewey-Barnsdall	1-Smith	SE SW NE 36-31-4 E	
Kay County			
Elk Pet	11-McIntyre	SW NW NW 9-30-9 E	
Litteral	1-Town lot	SW SE SW 10-31-10 E	
Denton et al	1-Lovett	NE NW NW 15-13-10 E	
Croft-Hunt	1-Webb	NW NE NW 15-31-10 E	
Wahn et al	1-Murphy	NE NW NE 27-31-10 E	
Tory-Murfin	1-Town lot	NE SW SW 10-31-10 E	
Sharkey-Ames	1-Town lot	SE SW SW 10-31-10 E	
Ellis County			
Phillips	1-Schmeisler	NWc 20-12-17 W	
Franklin County			
Haworth-Howard	1-Case	C SE SE 25-16-17 E	
Greenwood County			
Phillips	1-Mead	NEc NW 35-23-11 E	
Empire	12-Ott	NE SW NW 25-22-12 E	
Texas	1-Edwards	NE NW SE 21-23-11 E	
Larobb	1-Teeter	NW SW SW 18-25-9 E	
Sheedy et al	1-Newman	SE SW SE 32-23-13 E	
Harvey County			
Garland et al	1-Cox	NEc 27-24-1 W	
Helmerick-Payne et al.	1-Schmidt	SE NE SE 2-22-1 E	
Marion County			
Hartman et al	1-Kline	NEc NW 28-18-3 E	
Phillips	1-Rumald	NEc NW 10-17-4 E	
McPherson County			
Texas	3-Chinberg	SEc NW 32-18-2 W	
Marland et al	1-Wilke	C SW SW 9-21-1 W	
Russell County			
Wilcox	1-Dortland	NWc 4-14-15 W	
Mid-West Expl	1-Mermis	NEc 5-14-15 W	
Sedgwick County			
Lario et al	1-Tindem	C NE SE 22-29-2 W	
Morgan et al	1-Corn	SWc NE 28-25-1 W	
Sumner County			
Morgan et al	1-White	SEc SW 16-35-2 E	
Shawver et al	1-Spence	SEc NE 27-34-2 E OWD	
TEXAS			
NORTH EAST CENTRAL TEXAS			
Brown County			
Bruce	3-Shields		Brown
Lloyd	11-Collier	Blk-139	Smith
Anderson et al	1-Williams	Blk-283	Jones
Bradstreet et al	15-Stout	Blk-155	Smith
Caldwell	3-Caldwell	Sec-15 Blk-279	Kerr Co. Sch. Ld.
Britt-Kinnard	1-Bull	Blk-44	T&NO
Brock et al	1-Dunn	Blk-203	Flores
Callahan County			
Webb	1-Maltby	Sec-33	D&DA
Texas	9-Hatchett	Sec-29	D&DA
Texas	8-Hatchett	Sec-29	D&DA
Moutray-Duffy et al.	1-Hatchett	Sec-30	D&DA
True-Dees	1-McClendon	Sec-48	D&DA
Warren	1-Hearn Heirs	Sec-129	BBB&C
Hayes	3-Hearn	Sec-129	BBB&C
Texas	7-Hatchett	Sec-29	D&DA
Shaheen et al	1-Tatum	Sec-17 Blk-5	SP
Reiter-Foster	5-Hatchett	Sec-24	D&DA
Reiter-Foster	4-Hatchett	Sec-24	D&DA
Moutray	4-Hatchett	Sec-29	D&DA
Humble	1-Seale	Sec-129	BBB&C
Humble	2-Head Bros.	Sec-57	BBB&C
Eubank-Son	3-Eubank	Sec-48	Comal Co. Sch. Ld.
Stratten	1-McDaniel	Sec-71	Comal Co. Sch. Ld
Coleman County			
Mid-West Expl	1-Gill	Blk-63	Mudd
Gwinnup et al	2-Morris	Blk-269	Cochran
Spear et al	1-Jones	Sec-31	Comal Co. Sch. Ld.
Owens et al	1-Blair	Sec-18 Blk-1	GH&H
Red Bank	1-Blair	Sec-18 Blk-1	GH&H
Continental	10-Overall	Blk-701	Barkley
Chapman et al	2-Fuller	Sec-12 Blk-751	Martinez
Furman et al	1-Kingsberry	Blk-496	Wharton Co. Sch. Ld.
Eastland County			
Dale	13-Fox	Sec-58	McLennon Co. Sch. Ld.
Root et al	2-Watson	Sec-37 Blk-4	H&TC
Lorson	4-Ramsower	Sec-38	H&TC
Root et al	2-Hazel	Sec-61 Blk-4	H&TC
Harrell et al	1-Holcomb	Sec-1 Blk-4	H&TC
Atwood et al	1-Simmons	Sec-27	McLennon Co. Sch. Ld.
Arnold	2-Rush	Sec-44 Blk-4	H&TC
Haskell County			
Superior	2-Reynolds	Abst-350	Rodriques
Jack County			
Bryson	1-McCoy	Abst-1789	Ensworth
McCulloch County			
McLean-Jamison	2-West	Blk-155	H&TC
Shackelford County			
Drill-Earles	2-Matthews	Sec-32	ET
Stephens County			
Dorthy	1-Thorpes	Sec-456	SP
McArthur et al	1-Ledbetter	Sec-23 Blk-6	T&P
Throckmorton County			
Merry Bros. et al	1-Tuggle	Sec-910	TE&L
Gilmand-McMurray	1-Frazer	Sec-914	TE&L
NORTH TEXAS			
Archer County			
Madden-Hunt	1-Richardson	Blk-22	Scott
Bridwell	1-Richardson	Sec-7 Abst-687	EL
Madden-Hunt	11-Richardson		SAR
Burns	1-Crombie	Abst-13	Blount
Burns	1-Tuberville	Blk-20	Jefferson Co. Sch. Ld.
Hutchinson et al	5-Hutchinson	Sec-123 Blk-1	ATNCL
Cook County			
Brownfield et al	1-Rudd	Abst-433	GH&H
Wichita County			
United Prod. et al	1-Hodges	Sec-1 Abst-139	HT&B
United Prod	1-Allen et al.	Blk-44	KWVFL
Wilbarger County			
Consolidated	1-Houser		Tatum
Tower-McKanna	3-Waggoner	Sec-32 Blk-4	H&TC
King Royalty	1-Waggoner	Sec-3 Abst-534	SP
Shaw	1-Waggoner	Sec-18 Blk-4	H&TC
Phillips	2-Waggoner	Sec-41 Blk-4	H&TC
Phillips	5-Waggoner	Sec-5 Blk-5	H&TC
Simms	8-Waggoner	Sec-5 Blk-5	H&TC
Waggoner	11-Waggoner	Sec-30 Blk-4	H&TC
Staley-Wynne	4-Waggoner	Sec-32 Blk-4	H&TC
Phillips	5-Waggoner	Sec-47 Blk-2	H&TC
Fain-McGaha	22-Waggoner	Sec-24 Blk-4	H&TC
Easter	1-Waggoner	Sec-25 Blk-4	H&TC
Barkley-Meadows	7-Waggoner	Sec-5 Blk-5	H&TC
Young County			
Wichita Prod	1-Farmer	Abst-6	Anderson
Riggs et al	5-Sweet	Sec-1488	TE&L
Riggs et al	3-McKinley	Sec-1489	TE&L
Riggs et al	21-McKinley	Sec-1489	TE&L
Lynch et al	3-Johnson		Sergeant
Dorian et al	1-Johnson	Blk-12	Sergeant
Wise-Jackson et al.	2-Calvin	Abst-240	Rohus
Pennell et al	7-Johnson		Sergeant
Holbrook-Woods	1-Davis	Sec-1395	TE&L
Clark et al	1-Rushing	Sec-3401	TE&L
Petrolum Prod	8-Henning	Sec-410	TE&L
Pemeta	3-Graham	Abst-243	Rhoton
Christie Bros	2-Hatfield	Abst-169	Kutch
Schermerhorn et al.	5-Thompson	Sec-2692	TE&L
PANHANDLE			
Carson County			
Skelly	10-Schaeffer	Sec-198 Blk-3	I&GN
Gray County			
Texas	9-Saunders	Sec-1	Eustis
Texas	8-Saunders	Sec-3	B&B
Hutchinson County			
Texas	3-Garner	Sec-122 Blk-4	I&GN
Wheeler County			
Canadian River	2-Williams	Sec-2 Blk-27	H&GN
Lone Star	2-Stuckey	Sec-92 Blk-17	H&GN
WEST TEXAS			
Howard County			
Marland	4-Chalk	Sec-124 Blk-29	W&NW
Schermerhorn	4-Roberts	Sec-157 Blk-29	W&NW
Mid-West Exp	1-Clay	Sec-138 Blk-29	W&NW
Marland-Texon	4-Settles	Sec-133 Blk-29	W&NW
Marland-Texon	1-Eason	Sec-6 Blk-32	T&P
Pure	7-Chalk	Sec-125 Blk-29	W&NW
Jones County			
Campbell et al	1-Berry	Sec-15 Blk-2	SP
Sinclair	3-Bickley	Sec-50 Blk-18	T&P
Anna Belle	1-Bickley	Sec-50 Blk-18	T&P
Mitchell County			
California	6-Foster	Sec-6 Nlk-29	T&P
Pecos County			
California	2-Smith	Sec-21 Blk-194	GC&SF
Winkler County			
Amerada	3-Leck	Sec-3 Blk-74	PSL
Anderson et al	1-Hendricks	Sec-5 Blk-B-12	PSL
Barnsdall	3-Morton	Sec-26 Blk-B-12	PSL
Marland	2-Morton	Sec-27 Blk-B-12	PSL
Yoakum County			
Weekly	1-Tannehill	Sec-791 Blk-D	Gibson

Completions in Texas, Week Ended November 24, 1928

NORTH EAST CENTRAL TEXAS

Brown County

Company	Well	Farm	Survey	Sec. and Blk.	Depth	Init. Prod.
Phillips et al	1	Shumaker	HT&B	Sec-3	T.D. 25	Dry
Hammon et al	1	Childress	ET	Sec-8	T.D. 1351	Dry
Gilman et al	6	Hickman	Benson	Blk-783	T.D. 1464	Dry
Crown	1	Hale	Cummings	Blk-607	T.D. 542	Dry
Young Bros. et al	14	Hickman	Benson	Blk-783	1258-2168	175
Texas	3	Byler	T&NO	Blk-43	1321-1324	30
Midland	10	Butler	Benson	Blk-783	1280-1292	20
Lloyd	9	Collier	Smith	Blk-139	424-431	15
Kone Prod	19	Hickman	Benson	Blk-783	1277-1285	25
Kone Prod	18	Hickman	Benson	Blk-783	1272-1307	35
Keen	1	Armstrong	H&GN		1440-1441	8
Bradstreet et al	14	Stout	Smith	Blk-155	1168-1195	18
Bruce	2	Shields	Brown		489-509	15
Bruce	1	Shields	Brown		505-520	½M
Lloyd	10	Collier	Smith	Blk-139	416-429	40

Callahan County

Hays	1	Hearn	BBB&C	Sec-129	T.D. 770	Dry
Thomas et al	1	Merrick	BBB&C	Sec-21	T.D. 1935	Dry
Cranfill-Reynolds	2	Scott	SP	Sec-315 Blk-2	T.D. 691	Dry
McNeil et al	1	Jones	Comal Co. Sch. Ld.	Sec-85	T.D. 482	Dry
Reiter-Foster	3	Hatchett	D&DA	Sec-24	339-347	5
Texas	6	Hatchett	D&DA	Sec-29	333-349	31
Texas	5	Hatchett	D&DA	Sec-29	323-353	10
Reiter-Foster	2	Hatchett	D&DA	Sec-24	341-346	5
Moutray	3	Hatchett	D&DA	Sec-29	353-365	10
Moutray	2	Hatchett	D&DA	Sec-29	348-357	6

Coleman County

Cunningham et al	4	Jennings	Lipscomb	Blk-94	1132-1145	115
Chapman	1	Fuller	Martinez	Sec-12 Blk-251	1568-1574	9
Barnsdall	1	Kelly	Cleveland	Sec-4 Blk-495	1394-1396	3.32M
States et al	5	Watson	Mason	Blk-163	T.D. 535	Dry
Pierce et al	1	Eddington	Scott	Blk-170	T.D. 450	Dry
Derby	9	Jennings	Lipscomb	Blk-94	T.D. 1225	Dry

Eastland County

Chestnut-Smith	2	Brashear	Van Norman		T.D. 3620	Dry
Goodwin-Lewis	1	Boorland	Van Norman		T.D. 2635	Dry
Root et al	9	May	Sec-18 Blk-4		1643-1700	4
Belva	4	Goode	Stubblefield		3605-3613	600

Jack County

Cunningham et al	1	Garrett	Putman	Abst-465	T.D. 825	Dry

Shackelford County

Snowden-McSweeney	1	Bickley	T&P	Sec-50 Blk-18	2479-2481	1100
Mid-West	1	Mathews	ET	Sec-58	1181-1185	10
Texas	5	Sedwick	ET	Sec-1 Blk-2	545-559	5
Roeser-Pendleton	41	C60-Cook	ET	Sec-60	1145-1171	80
Roeser-Pendleton	43	C60-Cook	ET	Sec-60	1218-1221	30
Roeser-Pendleton	42	C60-Cook	ET	Sec-60	1176-1177	1
Roeser-Pendleton	8	A62-Cook	ET	Sec-62	1364-1365	100
Roeser-Pendleton	22	A61-Cook	ET	Sec-61	1284-1308	50
Roeser-Pendleton	20	A61-Cook	ET	Sec-61	1354-1355	50
Roeser-Pendleton	82	A60-Cook	ET	Sec-60	1153-1175	25
Wentz	1	Mathews	ET	Sec-58	T.D. 1167	Dry
Mook-Texas	1	McCreight	Scallors	Sec-280	T.D. 2570	Dry
Harris	2	Mathews	ET	Sec-57	T.D. 1200	Dry

NORTH TEXAS

Archer County

Company	Well	Farm	Survey	Sec. and Blk.	Depth	Init. Prod.
Turner et al	1	Lyles	Hooper	Blk-7	1686-1696	90
Payne-Eddleman	5	Parrish	SP	Abst-1004	1586-1597	50
Madden-Hunt	9	Richardson	SAR	Blk-7	1290-1306	60
Hutchinson et al	4	Hutchinson	ATNCL	Sec-123 Blk-1	1151-1155	65
Panhandle et al	5	Farmer	NAR		T.D. 1545	Dry
Baggett et al	1	Kinder	Clark	Sec-63 Blk-5	T.D. 1320	Dry

Wichita County

Stumpf et al	1	Hamilton	DCSL	League-4 Blk-22	T.D. 1826	Dry
Knight	1	Mitchell	CT	Blk-21	T.D. 1905	Dry
Humble-Empire	1	Hines	H&GN	Sec-11	T.D. 2015	Dry
Holbrook-Woods	24	Kemp	HT&B	Abst-139 Blk-82	1196-1203	30

Wilbarger County

Phillips	1	Waggoner	H&TC	Sec-5 Blk-5	1867-1891	184
Fain-McGaha	17	Waggoner	H&TC	Sec-24 Blk-4	2443-2444	42
Roberts-Phillips	1	Yarborough	H&TC	Sec-8 Blk-5	T.D. 2506	Dry
Fain-McGaha	21	Waggoner	H&TC	Sec-24 Blk-4	T.D. 350	Dry

Young County

Wolfe	7	Lowe	TE&L	Sec-59	T.D. 869	Dry
Riggs et al	20	McKinley	TE&L	Sec-1489	T.D. 596	Dry
Republic Prod	2	Haygood	TE&L	Sec-1468	712-713	14
Petroleum Prod	3	Parish	TE&L	Sec-409	1093-1102	45
Kleiner-et al	7	Davis	TE&L	Sec-1487	556-564	15
Kennedy et al	5	Johnson	Sergeant	Abst-253 Blk-11	504-509	30
Holbrook-Woods	2	Davis	TE&L	Sec-1395	892-904	30
Paull	4	Allen	Lynch		2120-2121	225

PANHANDLE

Carson County

Empire	1	Crutchfield	I&GN	Sec-28 Blk-4	2405-2638	14M

Gray County

Danciger	1	Flint	H&GN	Sec-3	2845-2860	30
Perkins-Cullum	1	Sanders	BSTF	Sec-4 Blk-1	2804-2900	18M
Barker et al	1	Morse	H&GN	Sec-66 Blk-25	2620-3012	20
Phillips	3	Johns	I&GN	Sec-87 Blk-3	3119-3125	327
Landreth Prod	1	Langham	H&GN	Sec-1 Blk-B-2	2785-2786	230

Potter County

Amarillo	1	Bush	BS&F	Sec-19 Blk-6	3630-3687	2½M

Wheeler County

Lone Star	1	Frostle	H&GN	Sec-90 Blk-17	1760-1820	12M

WEST TEXAS

Brewster County

Reece-White	1	Kimbal	GH&SF	Sec-204 Blk-9	T.D. 2265	Dry

Crockett County

Furhman	1	Padgett	White	Sec-17	T.D. 1897	Dry

Howard County

Merrick-Bristow	3	Roberts	W&NW	Sec-137 Blk-29	2949-3001	20 (1 Hr.)
F. H. E.	5	Roberts	W&NW	Sec-136 Blk-29	3028-3031	300
Schermerhorn	3	Roberts	W&NW	Sec-157 Blk-29	2977-2999	200

Pecos County

Roxana	11	Tippett	TC	Sec-102	1253-1477	240(1 Hr.)
Fletcher et al	1	Winfield	T&STL	Sec-11 Blk-132	T.D. 1933	Dry
Olean	1	Harrell	TC	Sec-98 Blk-A-2	T.D. 3303	Dry
Zock et al	1	Union Ld.	H&GN	Sec-35 Blk-12	T.D. 1368	Dry

Runnells County

Gibson-Johnson	1	Rainwater	Miginel		T.D. 2940	Dry

Winkler County

Southern Crude	T88-5-2	Hendricks	PSL	Sec-34 Blk-26	2720-2844	150(1 Hr.)
Southern Crude	T90-3-2	Hendricks	PSL	Sec-47 Blk-26	2898-3060	150
Eastland	2	Hendricks	PSL	Sec-35 Blk-B-5	2864-3090	600
Republic Prod	5	Hendricks	PSL	Sec-42 Blk-B-5	2795-2815	120

Completions in North Louisiana and Arkansas, Week Ended November 22, 1928

Louisiana—Webster Parish—Spring Hill

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	Lewis No. 1	25-23-10	3223	salt water

Caddo Parish—Pine Island

Magnolia Pet. Co.	Levee Board No. 3	7-20-15	3012	270 bbls.

Bossier Parish—Bellevue

Morgan Oil Co.	Smith No. 1	26-19-11	1865	dry, abd.

Claiborne Parish—Homer

Gulf Refining Co.	Langston No. 17	19-21-7	1284	15 bbls

Ouachita Parish

Jordan Drilling Co	Cole No. 3	1-18-3E	2193	5M gas

Union Parish

Carter & Wingfield	Clark A-2	7-23-1E	2295	20 bbls.
Woodley & Fox	McLeod No. 1	13-19-1E	3011	dry, abd.

East Texas—Shelby County—Joaquin

Company	Well	Location	Depth	Yield
Gulf Refining Co.	Pickering Lbr. Co. 1	Patterson HRS	3382	150 bbls.

Harrison County—Waskom

Nick Barbare	Furrh No. 4 A-1	J. Short HRS	2370	1M gas

Panola County

Charles W. White	Robinson No. 1	J. Matthews HRS	2660	20M gas

Arkansas—Calhoun County

Amerada Pet. Co.	Matlock No. 1	10-12-13	3744	dry, abd.

Union County—Rainbow City

E. M. Jones	J. F. Sample No. 1	7-17-13	3196	35M gas
Lion O. & R. Co.	Union Sawmill No. 4	7-17-13	3096	80 bbls.
Ohio Oil Co.	Crain No. 9	1-17-14	3014	750 bbls.
Ohio Oil Co.	C.B.Nash No.1 Acct. 2	6-17-13	3027	175 bbls.
J. W. Olvey	J. F. Sample No. 1	7-17-13	3257	salt water, abandoned

Completions in California, Week Ended November 10, 1928

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
General Petroleum	Mission 3	....	6090	250
Italo Petroleum	Knight 1	....	7316	1504
Midland Petroleum	Well 1A	....	6742	250
Olympic Oil & Refg.	Well 14	....	6853	832
Richfield	R. C. 9	....	6893	1790
Shell	Nesa 9	....	7305	420

Santa Fe Springs

Geo. F. Getty	No. 8	....	5665	4100
Star Petroleum	Gross 2	....	5702	1800
Union Oil	Bell 30	....	5754	2800
Universal Cons	Blanchard 7	....	5747	4100

Seal Beach

Company	Well No.	Location	Depth	Init. Prod.
Standard	San Gab 10	....	5455	2330

Ventura Avenue

Bolsa Chica	Hartman 3	....	7212	3500

Kern Front

C. C. M. O.	No. 21	23-28-27	2240	300

Sunset

Union Oil	Boss 2	10-11-23	5495	175

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended November 24, 1928

	Nov. 24 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Nov. 17 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Osage	..	6	39	1	46	1	12	32	3	48
Bristow-Cushing	5	10	38	5	58	3	9	41	7	60
North Oklahoma	8	5	44	31	88	5	6	41	30	82
South Oklahoma	13	20	76	26	135	10	16	79	25	130
Muskogee	..	7	44	26	77	..	9	46	25	80
Okmulgee-Bristow	7	32	62	28	129	7	33	60	35	135
Seminole Dist.	25	130	303	22	480	28	124	305	18	475
Total Oklahoma	58	210	606	139	1,013	54	209	604	143	1,010
KANSAS	..	*42	233	56	331	..	*69	226	43	338

	Nov. 24 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Nov. 17 Loc.	Rigs	Drg.	S.D.	Total
TEXAS										
Central	54	28	195	145	422	52	35	210	137	434
Panhandle	19	21	92	47	179	19	24	85	51	179
N. Central	20	27	137	38	222	24	47	115	43	229
West	96	51	214	130	491	92	43	205	135	475
Total Texas	189	127	638	360	1,314	187	149	615	366	1,317
New Mexico	4	3	32	15	54	3	3	27	17	50
GRAND TOTAL	251	382	1,509	570	2,712	244	430	1,472	569	2,715

*Location and rigs combined.

Improving Wire Rope Performance

Thorough Regular Inspection and Adequate Records Advised by Special Committee Studying This Subject

TULSA, Nov. 23

EMPHASIZING the necessity for better inspection of wire rope and for adequate records on performance of rope to be kept by the oil companies, the sub-committee of engineers of the Mid-Continent committee on wire rope standardization presented, through Glenver McConnell, of the Shell Oil Corp., some of the conclusions it has reached in the past two years of study.

The conclusions were given in the form of a paper on inspection and care of wire rope at the first meeting of the Mid-Continent section, American Petroleum Institute division of development and production engineering, held here Nov. 16.

This subject of wire rope has been a much worried-over affair in the Institute's standardization work and at times some sore spots have developed. Manufacturers and oil company representatives have not seen the question alike at all times.

What the Mid-Continent sub-committee of engineers makes emphatic, in the preliminary report, is that inspection of the product is not always thorough. It emphasized also that the oil companies should seek to improve their system of keeping records on performance and should do more thorough work in seeing that wire rope is handled properly in service.

Mr. McConnell's paper contained some of the "high spots" from a most exhaustive compilation of data, which will be presented at the Chicago meeting. The history of the work done in the Mid-Continent he summarized as follows:

"Early in 1926 a number of companies in the Mid-Continent area began to adopt a system of field inspection for visible defects of wire rope fabrication, and to develop methods of observing signs of break-down of ropes while in service. Methods were tried for prolonging the life of ropes by a system of servicing conducted by trained men employed for that specific duty. These men acted, partially, as instructors to men on the derrick floor, which resulted in a gradual improvement of service records obtained and a better appreciation of many items of rig equipment introduced to increase the efficiency of rope service. At the same time, engineers were at work on laboratory procedure testing the quality of wire used and the properties desired for each grade of material.

MEMBERS of the sub-committee of engineers of the Mid-Continent committee on wire rope standardization of the American Petroleum Institute are K. C. Sclater, Marland Oil Co., chairman; Glenver McConnell, Shell Oil Corp.; E. J. McKee, Phillips Petroleum Co.; and M. G. Ensinger, Union Wire Rope Corp.

"The American Petroleum Institute began conducting extensive research under the valuable leadership of C. C. Sharpenberg of the Standard Oil Co. of California, national chairman, with the result that a set of specifications for wire rope was adopted by the board of directors of the American Petroleum Institute at the Chicago meeting, Dec. 8, 1927. No Mid-Continent sub-committee of engineers was appointed until the early part of 1927, and their participation has been largely for the purpose of perfecting what has been already adopted for specification. Prior to final adoption of the specifications, the Mid-Continent sub-committee urged that, in fairness to the Mid-Continent producers they represented, it be given 'further time for investigations, tests, and compilation of data,' in order that their approval of the specifications when adopted could be given without any reservation. Certain criticisms had necessitated this request. The specifications having been adopted there has resulted a strenuous effort by the Mid-Continent sub-committee to have a definite work accomplished for presentation at the next annual meeting of the Institute.

K. C. SCLATER

Chairman of the sub-committee of the Mid-Continent committee on wire rope standardization, and with the Marland Oil Co.

"Wire rope specification to be complete and acceptable should include, not only adequate tests by which quality and grade of material used in the rope may be checked, but should, also, include ways and means for determining workmanship and fabrication of the finished product. The specifications now include very desirable safeguards for the quality of wire used and definite means for ascertaining the physical qualities by laboratory tests. A number of us have been applying methods for determining quality of workmanship and fabrication of ropes purchased for the past two years and eight months. The result has been that many service records are available showing improved service of ropes and valuable data."

MR. McCONNELL then took up the subject of defects in wire ropes. He said:

"Where ropes have given unsatisfactory service, both the user and the manufacturer are finally interested in ascertaining the cause and placing the responsibility. The causes of short service can be divided broadly into two classes, the first of which is improper handling of wire rope in the field. We, therefore, believe that the user, in trying to forestall the possibilities of large monetary losses, should be more interested in trying to detect ropes that are faulty before placing them in service instead of waiting for trouble to develop later. Therefore any rope specification must be workable and instructive.

"Before discussing field application and abuse, let us consider rope construction and fundamental details regarding points of good and poor fabrication. The following illustration shows the principal types of strand construction of ropes used in the oil fields.

"Strands of any of these constructions are bound together around a hemp core, or an independent wire

TABLE 1. VISIBLE DEFECTS OF WIRE ROPE FABRICATION

As Revealed By:	Probable Cause	Probable Influence in Service
A. General Appearance for Any Irregularities In Uniformity		
1. Excessive die-scratching	Closing pressure too heavy, or improper alignment	Reduces effective area of wire and affects its tensile strength and torsion values, causing a premature break.
2. Excessive gaps visible between strands	Core is too large or too hard	Develop either high strands, tight strands, or cuts hemp core, frequently causing complete break of rope.
3. Extruded core	Large soft core	Excessive number of wires breaking, or premature rope failure because of collapsed core.
4. Rough strands	Misplaced or missing wires	Causes uneven localized wear of wires in strands.
5. Broken wires	Defective braizes or "spotty" wire	Excessive localized wear of wire in strands.
6. Kinks and Dog-Legs	Improper reeling and handling	"Spot" wear and for a bad kink premature failure.
7. Cut wires and crushed or bruised strands	Damaged in handling or shipping by running over or bumping into sharp obstructions	Local wear or, if very bad, failure.
B. Cross-Section of Rope Cast in Zinc		
1. Roundness	Fabrication	Round rope means even wear; not round rope means uneven wear, more on one side than on other.
2. Low or drawn strands	Relatively tight strands, or an unround rope	Relatively pulled tighter and take a greater proportion of the load, frequently causes a one strand break.
3. Strand gaps	See A-2	If wide, see A-2.
4. Misplaced and missing wires	Careless workmanship	See A-7.
5. High strands	Relatively loose strands or an unround rope	Develops high strands in service and excessive wear on these strands.
C. Internal Inspection		
1. Core; length of 10 lays & direction - - - -		- - - -
2. Core; impressions from (strands)	Heavy die pressure	Good field results expected (if other conditions
	Heavier die pressure	Better field " ") are favorable
3. Adjacent strand nicking	Core is too small or too soft. Combination with light strand impressions shows core too small	Results in loss of elasticity of rope from binding or nicking of adjacent strands, frequently causes break of entire rope.
4. Lubrication (core (external	- - - -	If none, no protection from core deterioration due to rusting strands.
4. Lubrication (core (internal	- - - -	If none, more rapid core deterioration.
4. Lubrication (strand	- - - -	If none, rapid rusting.

Table 1. Visible defects of wire rope fabrication

rope center, in a prescribed number of turns expressed in multiples of the rope diameter; so that for each size of rope, there is a prescribed length-of-lay within certain limits governed more or less by the service for which the rope is intended.

"In the laying machine of a rope factory the strands are guided into proper position and brought together in a vortex at the entrance throat of a guide block while being twisted into a regular symmetrical arrangement around the core rope. This gives the roundness and final external shape of the finished rope. The 'closing' of the strands in a manner that is correct or incorrect is very important. With the wires selected properly, drawn within tolerances given in the present specifications and with the strands constructed and finally closed around the correct size core rope to produce a good finished product, the quality of material selected and the effectiveness of the lubrication used will determine the life-giving properties of any rope. But all ropes of the same size and construction look alike to the workman."

(Note: Mr. McConnell here presented a table, shown here as Fig. 1, summarizing the visible defects of wire rope fabrication, also under "B" and "C" in his table, details on photographs shown of cross section of rope cast in zinc and internal inspection of rope.)

Following his explanation of how to cast a zinc button on a specimen of wire line, in order to assure that a perfect cross section be obtained, Mr. McConnell turned attention to the oil company side of the case—how to take care of the rope after it is purchased. This part of his discussion is as follows:

"AS STATED in the beginning little progress may be expected without the employment of a trained wire rope inspector. He should be selected on the basis of his capacity to observe, with interest, all such points of rope construction above outlined. He should have field training as a derrick man, tool dresser, or driller. He should be taught by one having a good knowledge of wire ropes and should be, at all times, very open-minded in the manner in which he conducts his work. He will, thus, be equipped to prove valuable to his employer and to his co-laborers in the field.

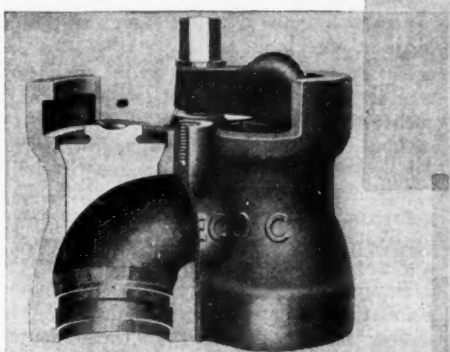
"His duties should include the inspection of all new ropes, frequent follow-up inspections on a scheduled basis while the ropes are being used, and finally, when the rope is ready to be junked. He should be capable of assisting any derrick crew in handling the rope including socketing, splicing, and the rolling-in of new core material. Should he be unwilling to assist a crew, when he is greatly needed, it may result in serious lack of cooperation on the part of the drilling crews.

"The system laid down involves: first, the inspection of new ropes as soon as they are received in the field, or by keeping a test specimen to be examined, should it be necessary to place a rope in service before an inspection can be made. The test specimen of a new rope should be 15 feet in length, seized at each end in three places before it is cut. It is very important, when cutting any wire rope, that it be seized properly with at least two or three seizing wires on each side of the cut so that the strands will be held tightly together preventing the rope from becoming unbalanced.

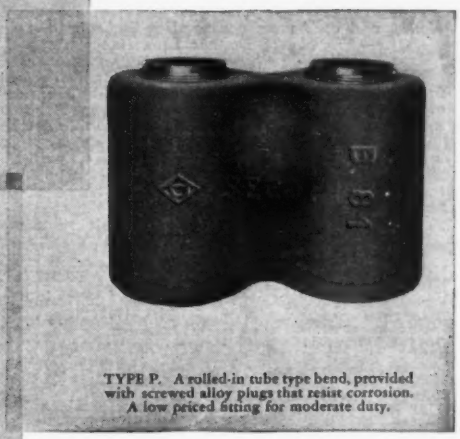
"The inspector will examine test specimens for all visible defects recording same on suitable forms to accompany his report. After making the examination, the button sample together with a sufficient section of the strands and core, should be tagged

SECO RETURN BENDS

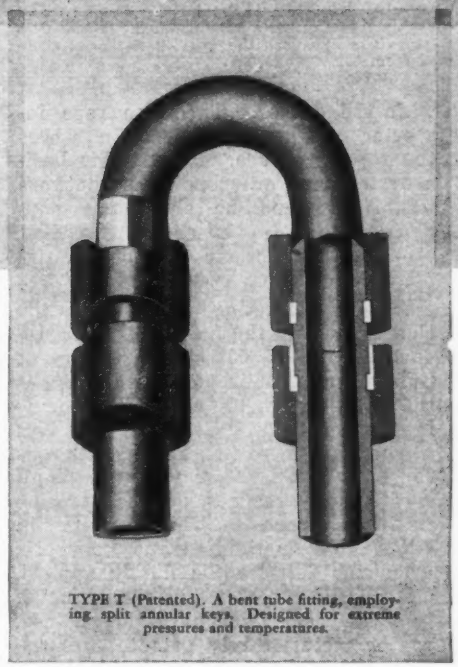
TYPE A (Patented). A stream-line flow return bend, locked to the tubes by split annular keys. Easily installed or removed for tube cleaning, inspection or replacement. Designed for any operating pressure or temperature.



T-TYPE C (Pat. Pend.). A rolled-in tube type return bend, fitted with ground joint deflector plugs. The stream-line interior minimizes friction.



TYPE P. A rolled-in tube type bend, provided with screwed alloy plugs that resist corrosion. A low priced fitting for moderate duty.



TYPE T (Patented). A bent tube fitting, employing split annular keys. Designed for extreme pressures and temperatures.

SECO Return Bends are made in four types to meet the requirements of various pipe still and cracking still design. They are supplied in tube sizes and center to center distances as specified, and for any operating pressure or temperature. With this complete line of fittings available, you can select a return bend that exactly meets your purpose.

Seco Bends are designed by an experienced engineering organization. Their special features are amply protected by basic patents owned by the Company, so that their design need not be a compromise to avoid infringement of other patents.

Seco Bends are made in two modern shops, and recently increased manufacturing facilities assure sound, accurately machined fittings and prompt delivery in any quantity.

Tubes, machined to dimensions, and header plates can be furnished with the bends. Thus, material for the complete coil can be ordered under one contract, with the entire responsibility for satisfactory performance resting on one Company.

Complete data and specifications on return bends, tubes and coil assemblies will be furnished without obligation. Address your request to the nearest office.

SECO RETURN BENDS

SMITH ENGINEERING COMPANY, 107 West Linwood Blvd., Kansas City, Mo.

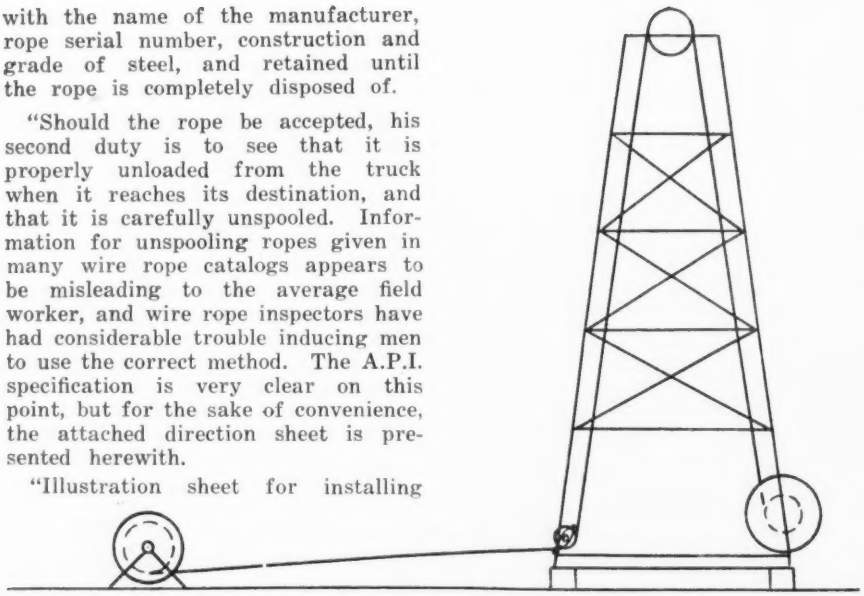
OMAHA STEEL WORKS COMPANY
48th & Leavenworth Sts., Omaha, Nebraska

DODGE STEEL COMPANY
6501 Tacony St., Philadelphia

with the name of the manufacturer, rope serial number, construction and grade of steel, and retained until the rope is completely disposed of.

"Should the rope be accepted, his second duty is to see that it is properly unloaded from the truck when it reaches its destination, and that it is carefully unspooled. Information for unspooling ropes given in many wire rope catalogs appears to be misleading to the average field worker, and wire rope inspectors have had considerable trouble inducing men to use the correct method. The A.P.I. specification is very clear on this point, but for the sake of convenience, the attached direction sheet is presented herewith.

"Illustration sheet for installing dividers on bull wheel shaft will show a safe procedure to follow in this regard. The length of a bull wheel shaft is such that where large coils of rope are used, one coil being the reserve and the other the live coil, the dividers should be well supported, so that they will not shift in position under long continued service. The directions given may appear to be unusual, but the method outlined of lagging between the dividers in a satisfactory manner, is well worth the effort. Frequently lines are damaged due to shifting of dividers as well as by 'dog-legs' or kinks made by the cross-over around sharp corners. Often one observes that the crew will not maintain sufficient wraps of rope within the space between the two dividers to relieve load stress from the reserve coil that is loosely spooled on the shaft. Much may be written to satisfy the requirements for correct spooling on bull wheels and other hoisting drums, but anyone seeking information on abusive methods can find it in many publications on the subject.



Directions for Putting on New Line

Mount reel on horses equipped with brake drum and spool off from under side. Use a tubing block. Do not bend line under sill and do not use a snatch block

Estimate amount of line to be placed on storage end and measure this amount accurately by flagging over the derrick. Wind the line carefully on the bull wheel shaft, making it spool evenly like the thread on a spool. Wrap three coils between the dividers to take the strain off the storage end and continue to wind the line on the active space of Bull Wheel in an open manner.

Directions for transferring more line from storage end to spool on tug side, in order to prevent kinking the line during this operation.

Run the tools in the hole to last coil on bull wheel shaft, set beam on headache post, and twist line up to 40 to 50 turns (for transferring 150 feet of line), using a rope wrench. While one man holds the twist with the wrench, the other clamps the line with the drilling clamps. Then you are ready to transfer the amount of line needed from the storage end.

"After the line is installed, the inspector's third duty is to see that bad operating conditions are avoided as much as possible. Sheaves should be examined with feeler gauges and the sheave conditions noted. Troubles that develop due to many abuses are very carefully outlined in the Appendix C of the present A.P.I. Standards No. 9-A, Sixth Edition. It would be well for every field operator to study the troubles listed therein and acquaint themselves familiarly with the causes. The wire rope inspector visiting each location where the rope is in use, makes it his business to point out conditions that are not right; and he should be supported by those in charge, so that repeated instructions will not be ignored.

"Proper socketing of ropes, while elementary to the user in other industries, needs further stressing at this time. Improper socketing is the cause of much wire line trouble in the oil fields. Socketing involves more than merely 'getting the rope to hold,' for if improperly done, it frequently causes unequal tension in the strands. This results in either high or tight strands, or both, when the full load is finally applied. Of course, a socket job should never be made by bending back the strands, as the metal merely gets to the outside wires, leaving the inside wires free to work. If a canvass were made, it would probably be found that the majority of drillers handling cable tools will still insist in preparing the socket in this wise.

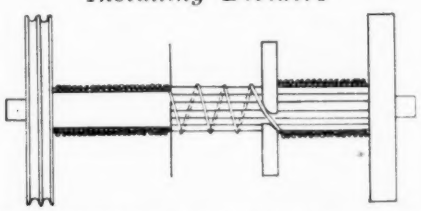
"In making the socket the line is first made straight and all bends in the individual wires of the mule tail are fairly well straightened. The line must be served well with three seizing wires before cutting. Be sure to use soft wire for seizing. Don't use soft rope! After opening up the wires, the grease and dirt must be removed. This is easily done by washing the wires in gasoline. It is, also, important to make sure that the socket basket is thoroughly cleaned. Zinc, only, should be used for socket metal. Care must be exercised to see that it is heated to the proper temperature, but not overheated, for burnt metal and a bad socket will be the result which will cause the blame to be attributed to the idea of using zinc.

"To determine the proper temperature of metal to pour, the 'pine stick method' is commonly used. When the 'pine stick' is inserted into the hot metal and quickly withdrawn, it should not ignite or become more than slightly burned or charred, nor should it have any metal adhere to it. If the stick appears to be badly burned, the metal is too hot for pouring; if the metal adheres to the stick, it is too cold. Make sure that dross is carefully skimmed off as zinc will show more dross than No. 4 babbitt.

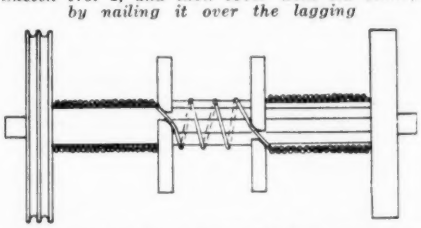
"Lines should be frequently resocketed and, when doing so a careful examination made of the lower end of the rope. This is particularly necessary on drilling and swabbing operations.

"As abuses of wire rope are frequently mentioned and written, only the most flagrant abuses will be further considered. Perhaps, the worst abuse is induced by the use of drilling clamps to 'let out screw.' Unfortunately, this cannot always be avoided and we witness in recent years more and more use of the clamps for 'slipping the rope' owing to the greater depths drilled, the slow motion required at these depths and the enormous weight of rope held by the clamps. Until better designs

Instruction Sheet for Installing Dividers

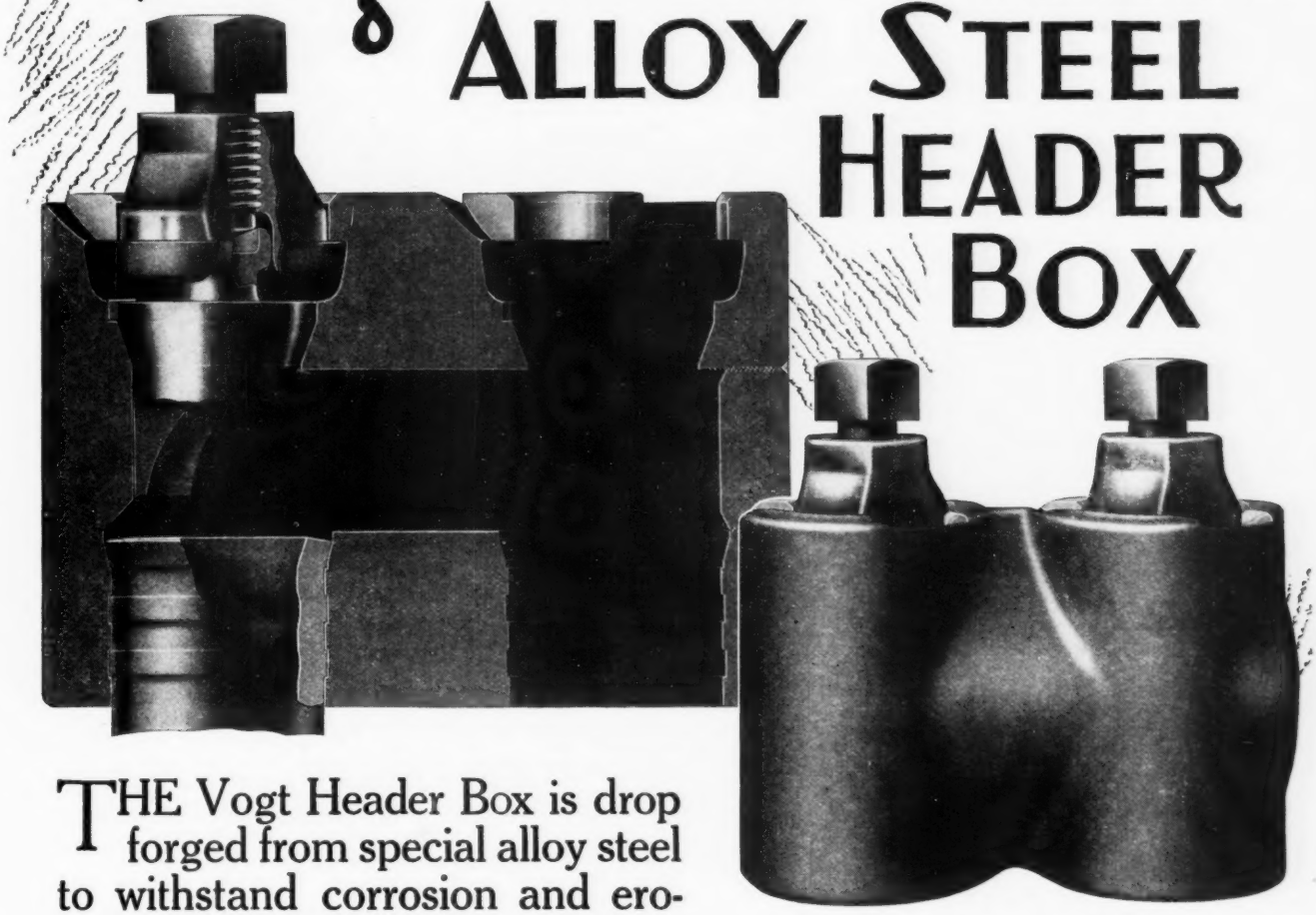


DIRECTIONS FOR INSTALLING USUAL DESIGN OF STEEL DIVIDERS—Use 3" x 5" hard wood for lagging and place the 5" side against the shaft, drive pieces in place between the dividers, and between the divider and the brake wheel. Place wood lagging close together completely around the shaft, as shown in the above Sketch No. 1, and then cover with old belting by nailing it over the lagging



DIRECTIONS FOR INSTALLING WOODEN DIVIDERS—When using wooden dividers be sure to bevel off the edges as much as possible where the line goes through, as shown in Sketch No. 2 above, as this will help to prevent kinking the line at these points. Use 4" x 5" hard wood for lagging, placing the 5" side against the shaft and drive the pieces of lagging solidly in place completely around the shaft, as shown in the above sketches. Place the lagging between the dividers, and between the divider and the brake wheel. Cover with old belting by nailing it over the lagging

Vogt DROP FORGED ALLOY STEEL HEADER BOX



THE Vogt Header Box is drop forged from special alloy steel to withstand corrosion and erosion in cracking units operating at extremely high pressures and temperatures.

Drop forging insures uniform strength and toughness impossible to secure in steel castings due to unequal cooling strains. Defects commonly found in steel castings such as blow holes, shrinkage cracks and spongy areas are entirely eliminated in Vogt Drop Forged Alloy Steel Header Boxes. Forgings of alloy steel also provide a dense wearing surface superior to the material in any other type of box.

Friction is reduced to a minimum by the one piece deflector plugs which are keyed in position and firmly seated with a crab and screw.

HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.

Branch Offices: New York Chicago Philadelphia Cleveland Dallas

Manufacturers of: OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY.

Days line was on location 120 DAYS

Actual days of service 113 DAYS 1 HOUR

SHUTDOWN TIME

DATE	HOURS	REMARKS
2- 1-28	17 HRS	REPAIR ENGINE
25	1 "	WICO TROUBLE
27	2 "	REPAIR ENGINE
3- 5	2 "	CUT LINE
8	2 "	ENGINE TROUBLE
9	9 "	REPAIR ENGINE
18	3 "	REPAIR REGULATOR
21	24 "	WAIT ON NEW RIG
22	24 "	WAIT ON NEW RIG
23	24 "	REPLACE RIG
24	24 "	REPLACE RIG
25	24 "	REPLACE RIG
3-31	3 "	REPAIR LINE
4- 3	8 "	ENGINE TROUBLE

MAKEUP OF TOOLS

1 5" BURNS ROPE SOCKET

1 4½x17 SINKER

1 SET 5" DRILLING JARS

1 6-5/8" BURT SWAB

PRODUCTION

	SWABBING		AGITATING	
	TOTAL	DAILY AV.	TOTAL	DAILY AV.
No. bbls. oil	29647	262		
No. bbls. water	82437	729		

991--73% WATER

Shutdown time Record

are introduced to improve or replace the temper screw, all that can be expected is to insist on minimizing the amount of clamp slipping and to frequently inspect the slips of the clamps to make sure that the corners are properly rounded off to prevent as much as possible the crown wires of the rope from being cut.

"Another most serious abuse is jerking by sudden application of power on a loose line. A perfectly good rope may be badly damaged on the shaft or on the sheave by injudicious handling of power controller or throttle.

"Numerous other abuses such as flagging the rope with pieces of telegraph cord, wire, strips of leather, etc., have frequently been observed. No better way could be found to start a high strand or to increase the wear of one strand disproportionately to the others than by the use of flags of hard material inserted through the strands of the rope. A few threads of soft rope may be used quite satisfactorily without causing any trouble.

"Care should be exercised while swabbing, or running tools into fluid, to slow up the speed of the tools when they are nearing the fluid. Hard hitting at a high rate of speed means throwing in slack in the line, often resulting in strands opening and the core being forced out. This is commonly known as core popping.

"Finally, it must be emphasized that wire ropes should be carefully broken in; otherwise, like the motor in a new car, early trouble and short life will be the result.

"In swabbing service, hard drilling and occasionally on long clean-out jobs a wire rope receives much wear by being crushed out of round in the region where it is spooled on the bare shaft of the bull wheel. When this condition appears, it is desirable to change three or four coils from the storage to the service spool, thus replacing the distorted line with new rope where the worst strain occurs. After this method is employed a few times, it is well to cut off 75 to 100 feet, or whatever is considered necessary, from the bottom end of the rope, and resocket. Longer life will generally be obtained by more frequent cutting and resocketing.

"Repairing lines by inserting sections of new core is a process frequently necessary on lines used for running in fluid carrying a high percentage of salt water. In swabbing wells producing considerable water with the oil a poor hemp core will deteriorate very quickly permitting the lay of the rope to lengthen out early in the life of the rope. Swabbing operations offer a very good opportunity to observe the benefits derived from ropes carefully fabricated and containing a core of the best grade of material. In cases where the lay of the rope has been pulled down from, for example for ⅞-inch drillers, from 5½ inches originally to 8 inches, it may be found that the core has been badly crushed and has lost its life, and that unless something is done, the rope will soon begin to break at this point. By using a good core of a size suitable for a new wire rope of slightly smaller diameter than the rope in service, one may insert this, following the removal of the old core, by use of a splicing needle through three strands of the center of the rope and turning the needle in a circular motion following the lay of the rope. This is known as rolling-in a new core. It will materially increase the life of the rope and save splicing.

It can only be used successfully in cases where the lay of the rope has not been pulled down to an extreme extent. For instance, it will be found that where the lay of a ⅞-inch rope has been pulled down to 10 inches or 11 inches considerable difficulty will be experienced in keeping the new core in place.

"Lubrication of ropes while in service or, in anticipation of idleness and upon removal from one location to another will undoubtedly increase the service obtained. Oil companies are greatly interested in this and when it can be demonstrated that the cost of frequent application of lubricant is justified, some of us in the next few years will doubtless look back with amazement to our present day neglect in this matter. Proof of the importance of lubrication of an old rope came to my attention just recently. A 20-foot piece of ⅞-inch 6 x 7 left lay mild plow line, that was very rust-bound and worn, was reported no good. The outer wires were worn 1/3 to 1/2 way through. The piece was cut for two test pieces. One piece was soaked over night in old engine oil before socketing and the other piece socketed in the condition received. The result of the breaking test for each is as follows:

	Original rust-bound specimen	Specimen soaked in engine oil	Strength increase
Ultimate strength	29,700	40,840	11,140
First wire break	29,000	40,840	37.5%
No. strands broke	2	3	(*)
Ultimate elongation in 12"	0.118"	0.176"	0.058" 48.8%

*Better Break.

"Splicing may be successful where a rope has been damaged to such an extent that a break is likely to occur, unless the length of lay is pulled down to such an extent that a splice will not stay in place satisfactorily. Where splicing is avoided by replacing deteriorated sections of core with new core, it will finally be found that further efforts to increase the service of a rope by resorting to splicing will be unsuccessful. Sat-

The record production of automobiles this year, with every indication that next year will break the existing record, promises a greatly increased demand for gasoline in 1929

To be prepared to meet this increased demand every refiner should install the Dubbs Cracking Process, crack low priced fuel oil by the non-residuum method and produce maximum yields of gasoline

Maximum profits will follow

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Form 01251R 1M 12-15-26-50

DIRECTIONS:- The reel which accompanies each line is to be marked with a company number in large figures in several places so that it may be readily identified. This record should accompany it's reel number until the line is junked. This record must then be forwarded to - - - Office. We depend on the tool pusher or Farm Boss under whom the line is run to give us a complete and accurate record of it's performance.

Company ---------- Field Office ----------

WIRE LINE RECORD

Company Reel No. 42 Sheet No. ONE

Make ( )
M'f'g's No. 42110
Size 7/8 BY 5000'
From whom purchased ( )

Length 5000'
Lay RIGHT LAY
Specification 6 x 19 MILD PLOW
Price

SERVICE RECORD

WELL NO.	LEASE	DATE RUN ON	OPERATION	SIZE HOLE	FR. DEPTH	TO DEPTH	CUT OFF DATE	CUT OFF FEET	REMARKS
#2	SAMPSON	12-12-27	SWABBING	6-5/8"		4050'	12-28	100'	TO CHANGE SPOOLING
							1-12-28	158'	TO CHANGE SPOOLING
							31	235'	TO CHANGE SPOOLING
							2- 9	165'	TO CHANGE SPOOLING
							26	100'	TO CHANGE SPOOLING
							3- 4	80'	CUT OFF
							30	160'	CUT OFF
							4-11	75'	CUT OFF

SPLICE DATA

DATE	FEET OF THIS LINE	WITH FEET OF LINE NO.	MAKE

State your opinion of line THIS LINE IS SATISFACTORY

Date junked 4-12-28

By
Position Field Supt.
Date 4-16-28

Date transferred

*State whether drilling, underreaming, swabbing, cleaning out, stored inside or outside; give dates of each service.

SEE OTHER SIDE FOR LIFE OF LINE

Wire Line Record

isfactory instructions for correct splicing can be obtained from any rope manufacturer and all that shall be mentioned here is to warn the users to make splices of long length to obtain the best results.

"When a rope has been used to such an extent that the length of lay, core material, and the worn condition of the wires show that it is dangerous to continue further use, it should be removed at once. The inspector will be of use in determining when this condition exists and what disposition should be made of the rope. His final duty is to inspect all ropes after completion of service at each location where used.

"Three records may sound like asking for more information than is needed. This, however, is not the case. One record covering the original inspection of the rope is necessary, another record should be that which is filled in by the driller or farm boss, and a third record is prepared by the inspector covering his check on the operation conditions. We exhibit an example of a two page 'Wire Line Record' such as used by one of the companies in this district. With this record is exhibited a wire rope inspector's service report. The original rope inspection data may be on a suitable form on the back side of the inspector's service report. Standard forms for all three of these reports will require two sheets 8½ x 11 inches in size using both sides of each sheet. Our sub-committee believes that such forms can be developed satisfactorily for all purposes.

"When a rope has completed its service, and is worn out and junked, the inspector will attach both sheets together covering the report of the rope and mail same to the company's office. Such forms should be preserved until such time arises when all data of wire rope records may be correlated to show the progress obtained by this system, particularly, regarding selection of ropes used and the service obtained. No amount of this data is of any use unless it is properly correlated at intervals of at least once or twice a year. The law of averages applied will show very profitable information. The costs involved for rope records and inspection will be but a fraction of the savings obtained; causes for adjustments become infrequent and without the usual conflicts that generally arise.

"In conclusion it may be stated that the Mid-Continent sub-committee has made every effort to work out the possibilities of determining by a system of physical inspection sufficient information to judge with a high degree of success the quality of construction that ropes should possess purchases as A. P. I. product. There is no gainsaying the fact that the physical properties of the wires composing the rope are very important and should be of the best quality. We believe that, should any manufacturer agree to furnish the purchaser with A. P. I. specified product, he will not desire to stake his reputation alone on the quality of individual wires used but, also, upon how well he has built the structure—the rope. With the structure known, and abuses cured, service records and inspection records will reveal whether the steel is of doubtful quality. The purchaser retains the right to make laboratory tests, and when in doubt, he will doubtless check in this way.

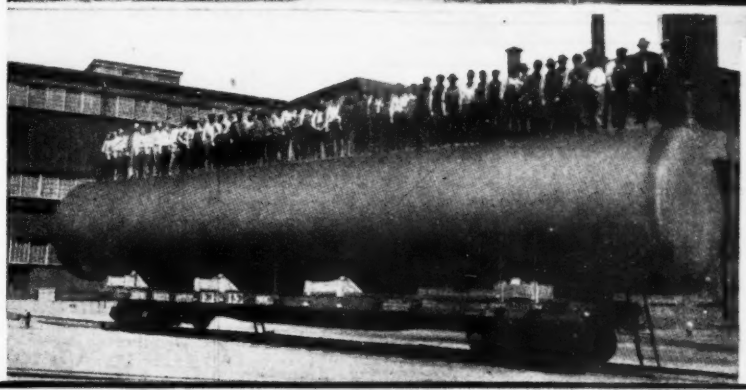
"The 'system,' having been a signal success with those who have used it, offers the most promising cure for adjustment abuses and 'poor rope' records that our committee can devise for mutual benefit to user and manufacturer."

A paper on crooked holes, some causes and effects, intended as the preliminary move in a general investigation of this subject, was read by E. J. McKee, of the Phillips Petroleum Co., chairman of the Mid-Continent committee on drilling practice. Other members of the committee are C. O. Rison, Indian Territory Illuminating Oil Co.; R. S. Cartwright, Prunty Drilling Co.; George Longfellow, of the Clint Moore Estate and H. C. Umburn, Shell Petroleum Corp.

Crooked holes constitute a subject of high economic importance to the industry and no where has it suffered more than in the Seminole district where, as the authors pointed out, wells have been abandoned that were making nearly 100 barrels daily because it was not possible to operate them at a profit due to broken rods, rod cut tubing and casing cut couplings.

There have been premature explosions of nitro-glycerin which junked holes after they were in the pay sand

FLUID-FUSION WELDED



High Pressure Stills

manufactured by the exclusive P.I.W. method of welding construction are advancing high pressure cracking operations throughout the Oil Industry.

Safety, absolute tightness, economy of operation, and long life characterize these cracking stills.

Because of the unusual features of the construction method and the complete furnace annealing of the completed still these vessels react to the stress of high-temperature, high-pressure cracking as one piece of metal.

P.I.W. engineers will design a still to meet your exact needs or your own specification will be used in fabricating the most satisfactory pressure vessel you have ever used.

Your nearest P.I.W. office will gladly go into the details.

Branch Plant—Beaumont, Texas

FLUID-FUSION STILLS have 6" Thick Walls

Fluid-Fusion welded stills are offered in wall thicknesses up to 6 inches.

For all practical purposes the Fluid-Fusion method welding construction sets no limit on wall thickness. Repair welds 9 inches thick have been successful. But for shop production a 6" thick limit is set and for most high pressure cracking stills a 4" thick wall has been found sufficiently heavy.

P.I.W. Products

Stills—6" Thick Walls
Oil Refining Equipment
Pressure Vessels
Vacuum Vessels
Agitators
Chemical Processing Equipment
Oil Storage Tanks up to 120,000 Barrels Capacity
Elevated Water Tanks
Pressure Pipe Lines
Penstocks
Autoclaves
Kilns
Dryers
Annealing Boxes
Retorts
Digesters
Spherical Vessels
Blast Furnace Equipment
Creosoting Cylinders
Galvanizing Kettles
Exchangers
Smokestacks
Pennsylvania Tank Cars
Steel Barrels and Drums
General Steel Plate Construction

P.I.W. STEEL PLATE CONSTRUCTION

The Petroleum Iron Works Company

Sharon, Pa.

NEW YORK CHICAGO HOUSTON TULSA

WIRE ROPE INSPECTOR'S SERVICE REPORT

CHECK ON OPERATION CONDITIONS

(1) How was Rope unspooled From under Reel to under and around BW Shaft
(2) Spooling condition on shaft Evenly Spooled
(3) Size of spool 18 Inch Diam.
(4) Type or Make of Dividers Steel Non-kink
(5) Is space between Dividers properly lagged Yes
(6) Make of Sheaves Mang. Steel
(7) Condition of Sheaves O K
(8) Make and Type of Rope Socket Burns Swivel
(9) Socket Metal used Zinc
(10) Method of Socketing Mule-tail
(11) Was Rope carefully broken in Not very carefully
(12) When did Rope structure first show trouble Core trouble after 70 Days — Expected, due to heavy load
(13) Was lubrication system used No
(14) How applied
(15) Was Rope slipped through clamps No
(16) New Core rolled in. Give date and feet 3-15-28 200ft of new core. No More.
(17) Power used 40 HP 2 Cycle Gas Eng. Belted to B.W Full load 50% of the time.

INSPECTION AFTER USE

Place Sampson #2 Date 4-16-28
(1) Length of Rope lay 7" to 14"
(2) Condition of Core Worn out
(3) Diameter of Rope(1) 3/4 + 1/16 (2) 3/4 + 1/32
(4) General Remarks Line had hard service and spooled badly after 80 days due to change in uniformity very good Service.

Inspector John Doe

Wire Rope Inspector's Service Report

and the report, written by Mr. McKee, said that some such explosions are due to crooked holes. Glycerin shells coming in contact with the pipe cause enough friction to cause the "juice" to expand and slop over.

There are, said Mr. McKee, two main causes of crooked holes. One is the abrupt inclination of the formations found in drilling. The other cause he divided into the following:

1—Not starting hole straight.

2—Excessive weight on cutting tool.

3—Rotating at too great a speed.

4—Flexure or distortion of drill column due to either of the above or to the two in combination.

5—Mud of improper consistency.

6—Improper and inadequate equipment.

"It is thought," said Mr. McKee, "that the foregoing explains many of the causes of crooked holes. However, a lot of the foregoing causes will be eliminated by close supervision of operations, taking advantage of all types of control apparatus which are on the market, and the use of up-to-date equipment and watching the operation. This is within the control of the contractor or tool operator.

"However, there is another factor which it is believed should be considered at this time. We have a very striking example in the development of our Seminole field. It was a case of getting the footage and to the top of the sand as quickly as it could be done. When conditions like this arise, the operator is nearly always actuated by the possibility of offsetting production.

"The producers urge the contractors or operators to use all possible speed and heavier equipment to get a well in as quickly as possible. Naturally, he is going to try to make good, doing so with a view in mind that if he makes good in this particular location, he may be able to get another. The result is that he is at his men's backs all the time, urging them to put forth their utmost efforts to bring the well in as quickly as possible. When such conditions exist, it is a tendency of human nature to overlook and do things which in more sane moments would not even be considered."

Other papers included a symposium on factors in pumping wells, chapters of which were written by L. A. Ogden, of the Empire Oil & Refining Co., on central power pumping; E. H. Griswold, Marland Production Co., on sucker rod strains and counterbalancing; W. K. Whiteford, Barnsdall Oil Co., on sucker rods and deep well pumping; L. B. Holland, Phillips Petroleum Co. on working barrels and valves; D. L. Trax, Gypsy Oil Co., on volumetric efficiency of pumping wells and Morgan Walker, Amerada Petroleum Co., on combination flowing and pumping wells. S. F. Shaw, consulting engineer, contributed a paper on fluid levels, back pressure and submergence in oil wells.

The one day session concluded with a dinner at the Mayo hotel at which short talks were made by C. D. Watson, chairman of the Mid-Continent section; Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association; H. M. Stalcup, vice president of the Skelly Oil Co. and Carl Young, national secretary of the A. P. I. division. Judge Dudley Monk, vice president of the First National Bank, Tulsa, was toastmaster.

Crude Gasoline Stocks Gain in October

NEW YORK, Nov. 24.—An increase of 709,000 barrels in pipe line and tank farm gross domestic crude oil stocks east of the Rockies in October was reported in a preliminary summary by the American Petroleum Institute. This brought stocks to 326,665,000 barrels on Oct. 31. Stocks had decreased 2,444,000 barrels in September.

Stocks of all refined products showed a net decrease of 2,450,000 barrels in October at refineries covering approximately 88 per cent of the operating capacity east of California, principally due to drafts on fuel oil.

Gasoline stocks increased 816,000 barrels, standing at 18,219,000 barrels on Oct. 31 at refineries east of California. This compares with a decrease of 30,000 barrels in September.

Stocks of lubricants increased 62,000 barrels in October, following a gain of 22,000 barrels in September.

Kerosene, gas and fuel oil stocks, which made substantial gains in September, decreased in October. Kerosene fell off 269,000 barrels in October, compared with increase of 211,000 barrels in September.

Gas and fuel oil stocks fell off 1,671,000 barrels in October, compared with a gain of 1,284,000 barrels in September.

Refinery stocks of domestic and foreign crude oil, which had decreased 1,323,000 barrels in September, decreased 723,000 barrels in October.

EVERY ENGINEER KNOWS
WHAT A GREAT INDUSTRIAL LEADER DID NOT
"That Steam Should be Purified"

"What?" he said, "I thought all steam was pure of itself—I didn't know it had to be cleaned."

Every engineer admits the desirability of clean, dry steam and its beneficent and economical effect in use.

All are not agreed, however, on the methods to be employed to achieve this condition.

Complete purification is necessary—partial purification is useless.

These things are discussed in an interesting way in the bulletin entitled

"A CUBIC FOOT OF STEAM VISUALIZED"

It is free to engineers and others who deal with steam problems.

USE THE COUPON

ANDREWS-BRADSHAW COMPANY division of BLAW-KNOX COMPANY **623 Farmers Bank Bldg., Pittsburgh, Pa.**

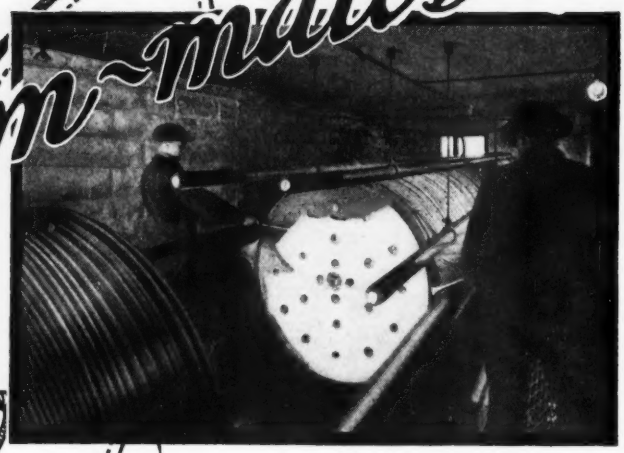
Please send booklet entitled "A CUBIC FOOT OF STEAM VISUALIZED"

*Name*_____

*Street*_____

*City*_____

Team-mates



IN AMERICA'S leading refineries, Carbondale Filter Presses and Filter Press Blankets go hand-in-hand in satisfying the strenuous demands of modern refinery methods in making lubricating oils.

This equipment is typical of Carbondale machinery, engineered by an experience of more than 37 years in the design and construction of refrigeration and other equipment for refiners.

A comprehensive description of Carbondale Refrigerating machinery is contained in our "Wax Plant Equipment Bulletin". Write for a copy.

Write for a copy of the Wax Plant Equipment Bulletin

THE CARBONDALE MACHINE CO.
Carbondale, Pa.
Branches in Principal Cities

Carbondale Refrigeration
CARMACO *for Refiners*

Pipe Stills

THE M. W. KELLOGG CO.
7 Dey Street - New York

Houston, Texas.....1514 Petroleum Bldg.
San Francisco, Cal.....444 Market St.
Los Angeles, Cal.....329 Petroleum Sec. Bldg.

I See By the Paper - -

U. S. Oil Man Kills Himself—Francis Sherry, formerly of Brooklyn, N. Y., manager of Bedford Petroleum Co., Havre, France, died in Havre hospital Nov. 16 from two self-inflicted bullet wounds in his breast. Thought despondent because of heart disease. The Bedford company is French subsidiary of Standard of New Jersey.—N. Y. Evening Post, Nov. 17.

* * *

American Maracaibo Buys in West Texas—Purchase of 32,000 acres of producing property in Winkler field in west Texas was announced by J. J. Cotter, president of American Maracaibo Co. upon his return from Fort Worth to New York City. F. H. Wickett, formerly chairman of the board of directors of the Pan American Petroleum & Transport Co., is now an official of the Maracaibo company.—N. Y. Times, Nov. 16.

* * *

S. O. Builds Radio Station—The largest private radio station in the world is being built by Standard Oil Co. of New Jersey at Rahway, N. J. It is intimated this is the first of a string of such stations with which 26 Broadway will keep in touch with its far flung interests and tankers at sea.—Chicago J. C., Nov. 7.

* * *

Carrier Buys Tank Cars—Chicago Rock Island & Pacific railroad will open bids Nov. 26, preparatory to purchasing 300 tank cars of 12,500-barrel capacity. Cars must be all steel. This is due to unusual oil development in the territory served by the Rock Island lines.—Chicago Tribune, Nov. 13.

* * *

Italian-Soviet Oil Trust—An organization has been formed for the purpose of marketing products from Russian oil in Italy. Deep water terminals will be built in Italian ports and Russian merchandise will be admitted to Italy, duty free, according to the arrangement, provided the syndicate supplies 75 per cent of the gasoline and oil needed by Italy's army, navy and aviation forces.—Chicago Daily News, Nov. 13 (Copyrighted).

* * *

700-Mile Pipe Line Idle—Sinclair Pipe Line Co., soon will suspend operation of its 700-mile pipe line from Casper to Kansas City, following the discontinuance of running U. S. Government royalty oil from the Salt Creek field. This is a 10 and 12-inch line and cost between 15 and 20 millions of dollars.—Chicago Journal of Commerce, Nov. 13.

New Equipment

The Griscom-Russell Co. with main offices at 285 Madison avenue, New York, and branches in principal oil centers, has opened a new branch at Memphis, Tenn.

* * *

Continental Can Co., Inc., New York, has acquired the can manufacturing business of the R. Hardesty Mfg. Co., Denver. The latter company makes cans for oils, paint, etc., and has had distribution in the west and southwest.

Other recent acquisitions by the Continental company include the Passaic Metal Ware Co., the U. S. Can Co., the Seattle-Astoria Iron Works, the Southern Can Co. and the New Orleans Can Co.

Blaw-Knox Co., Pittsburgh, Pa., manufacturer of steel products, has off the press a 37 page bulletin devoted to Blaw-Knox standard building of copper bearing galvanized steel for various industries.

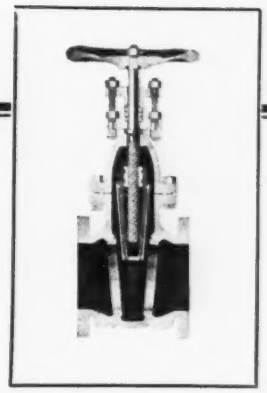
These buildings are easily and quickly erected anywhere, the bulletin states, and with the use of standard parts, the size can be changed or additions made to any building. They are firesafe, economical, inexpensive to maintain, and consist of structural steel frame work made in standard units with galvanized copper bearing steel cover. They are weather-proof and rust-proof, according to the company.

Among the buildings made by this company are service and bulk stations and garages.

LOS ANGELES, Nov. 23.—Richfield Oil Co. will have in operation by Dec. 1 a new natural gasoline plant in the Long Beach field of a daily capacity of 12,000,000 cubic feet with the absorbers operating at 30 pounds pressure. The J. A. Campbell oil froth absorbers are being installed These absorbers are 7 feet in diameter and 24 feet in height, having an oil capacity of 400 gallons per minute.

Steel is being raised on Tulsa's newest hotel, which is being built by Charles W. Bliss, oil man, at Second and Boston streets, near the Frisco-Santa Fe depot. It is to be 10 stories. Its location is at present out of the territory in which the notable construction has been done recently, but when as and if the union station is built it will be in commanding position. The citizenry voted bonds quite a while ago to help on the station but nothing further has been done.

Sectional view, Fig. 326, Jenkins Standard Iron Body Gate Valve, flanged.



Oil-tested Gate Valves

When you mention the words "oil-tested" in ordering Jenkins Gate Valves, you are buying products of proven worth. You are buying valves that have been tried and have made good in actual oil-service tests at the Jenkins factory. Valves, furthermore, that have been specially packed for oil service.

Note, in the sectional view of a Jenkins Gate Valve, the even distribution of metal, ample wall thickness for the pressure rating. Note the double-faced wedge, which is prevented from chattering. Note the spindle which is of manganese bronze.

Jenkins Gate Valves are made in standard, medium and extra heavy patterns. They are obtainable through supply houses everywhere.

JENKINS BROS.

80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street..Philadelphia, Pa.
646 Washington Boulevard....Chicago, Ill.

JENKINS BROS., Limited
Montreal, Canada London, England

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
Oil Burning Systems — *Complete Power Plant Equipment*

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New Manufacturing Program Suggested For Coast Natural Gasoline Plants

1.—Determine what products refiners can use in maximum quantities

2.—Operate plants to make these products

3.—Develop other markets for hydrocarbons which cannot be included in finished natural gasoline

LOS ANGELES, Nov. 23

REVAMP its manufacturing operations to use, in so far as practical, the heavier hydrocarbon constituents of natural gasoline in making the most suitable motor fuel blending material for refiners; and develop and exploit other markets for the other and lighter hydrocarbon constituents.

This was the progress of future activity for natural gasoline manufacturers in California, as outlined by George L. Ratcliffe, president of the California Natural Gasoline Association, and in charge of natural gasoline department of General Petroleum Corp. at its meeting here Nov. 13 and 14.

New specifications would have to be drawn up to define the natural gasoline product of greatest value to refiners in blending, said Mr. Ratcliffe. Manufacturing it would probably decrease output of natural gasoline at the plant, but its increased value to the refiner would bring a better price to the natural gasoline manufacturer, Mr. Ratcliffe believed.

Cooperative research, he said, might develop markets for that portion of natural gasoline constituents which would not go into this blending material, which might now have to be largely wasted, until these markets were developed.

That portion of Mr. Ratcliffe's address which comments upon the present status of the natural gasoline industry in California and his program of relief is published herewith.

By George L. Ratcliffe

CONDITIONS in the natural gasoline industry in California have not materially changed for the better or for the worse during the past year. The industry is still confronted with overproduction lowering the value of our product.

At the present time California is producing approximately 1,700,000 gallons of natural gasoline daily and the anticipated production from the Buckbee Sand at Santa Fe Springs will perhaps increase this production to more than 2,000,000 gallons daily.

Stocks of natural gasoline have continued to pile up steadily during the past three years until at the present time we have some 56,000,000 gallons of natural gasoline in storage on the Pacific Coast. This quantity of natural gasoline is nothing to worry about, particularly inasmuch as it constitutes only slightly over a two months' supply at the current rate of utilization.

The disconcerting fact about the industry in California is that, in spite of the fact that the Engler Distillation Recovery of practically all of the natural gasoline manufactured in California has been substantially increased, with a resultant substantial decrease in production, the end of each month sees the stocks of natural gasoline gradually growing larger.

The reasons for this continued overproduction are not difficult to ascertain. Overproduction of crude, increased efficiency of extraction of natural gasoline, and the gas lift are in a great measure responsible.

GEORGE L. RATCLIFFE
President of the California Natural Gasoline Association

The question of the utilization of natural gasoline goes hand in hand with the question of overproduction. In the past few years utilization of natural gasoline in California has increased more than 50 per cent, but the accompanying increase in production has always resulted in a net increase in the amount of natural gasoline put into storage at the end of the month.

It is plain that the industry can attack the problem from two angles. First, to endeavor to increase the utilization to the maximum, and, second, to endeavor to decrease the production to the point where it will approximately equal utilization. In order to intelligently attack these problems it will be necessary for us to equip ourselves with all of the information possible about natural gasoline.

All natural gasolines consist primarily of the hydrocarbons propane, iso-butane, butane and the heavier or base material commonly referred to as "pentanes and heavier." This base material is substantially the same for the great majority of natural gasoline. It is the so-called "butane-free" natural gasoline and will have ordinarily a recovery on Engler distillation as high as that of ordinary straight run gasoline.

Starting with this base material it is only necessary for us to find out exactly what percentage of butane can be included with this base in the finished natural gasoline to give the refiner a product for blending which will best satisfy his requirements. Dr. Brown's excellent work on the question of vapor lock will give us information as to the maximum volatility or vapor pressure permissible in natural gasoline for the purpose of blending up finished motor fuel.

New specifications will have to replace the present meaningless specifications of gravity, distillation recovery and I. C. C. vapor pressure. These new specifications will possibly consist of some modified form of Engler Distillation, together with an absolute vapor pressure determined by the Reid or Beistle method, or some modified or improved form there-

of. Ultimate analysis will be a great aid in drawing up these new specifications.

After we have determined what product, or products, will best suit the refiner's need, then it will be up to the industry to manufacture only those products which we can expect the refiner to utilize. Unquestionably this will result in a decrease in production of natural gasoline, but the decrease in quantity will be more than made up by the increase in value, both to the natural gasoline manufacturer and to the refiner.

It is true that in thus curtailing production an economical waste is involved, in that part of the butane and all of the propane which is extracted from natural gas will be wasted until further outlets are opened up for these materials, or by-products made from these materials. Our next most important problem, therefore, would be to develop these outlets. Perhaps this would be a fruitful field for cooperative research.

To those of you who have not already done so, I would suggest that you study carefully an excellent paper dealing with these problems presented by G. G. Oberfell at the May, 1928, meeting of the Natural Gasoline Association of America, and entitled "Significance of Volatility Changing."

There is every reason to believe that the overproduction will continue unless we ourselves take steps to limit our product to that which is most useful to the refiner. Statistics show that natural gasoline is produced in direct ratio to the quantity of light oil produced in California. The average production is about 3.8 gallons of natural gasoline per barrel of light crude produced.

Unless there is some logical reason for assuming that the supply of light crude in California will decrease materially with respect to the supply of heavy crude, there is no logical reason for expecting that the ratio of natural gasoline produced to straight-run gasoline produced from the crude will decrease.

This situation will also be aggravated by the continued increase in the production of cracked gasoline. Therefore, I venture to predict that we can expect the overproduction to continue and stocks of natural gasoline on the Pacific Coast to continue to rise unless we ourselves take steps to make production and utilization of natural gasoline more nearly equal.

I would not want to create the impression that I was pessimistic about the future of the natural gasoline industry. Never has the industry been on a better footing than it is today. Never was the outlook in the industry brighter. The point I wish particularly to stress is that the more we apply ourselves to the problems of the industry, the information that we gather about our product and its uses, and the more we try to anticipate the future, the more uniform and dependable will be the progress of the industry. Our old friend, the law of supply and demand, will take care of things in the long run, but the industry can save itself from extreme ups and downs by anticipating him as much as possible.

There is just one more thought that I would like to put before you this morning. It is not an association matter but is one which vitally affects the future of the industry and a subject that I believe merits the most careful consideration on the part of both sellers and purchasers of natural gasoline.

In the past it has been the custom to purchase and sell natural gasoline in California on long term contracts of from one to five years, the price being based on a differential under the service station price of motor fuel. Without intending or implying any criticism of what has been done before, I do not believe that such sales contracts should be made for longer periods than one year because of the fact that one or the other of the parties to such agreements is almost always penalized, due to the fact that the service station price of motor fuel does not always bear any direct relation to the value of natural gasoline.

If contracts were made only for periods of one year or less it would have a very important stabilizing effect upon the industry and in the long run would benefit both the seller and the purchaser.

In conclusion, let us resolve, therefore, to attempt to do three things during the coming year:—

1—Determine what product or products we must make to enable the refiner to best utilize the maximum quantity.

2—Operate our plants to make this or these products.

3—Develop markets and special uses for such hydrocarbons as cannot be included in our finished natural gasoline.

It has often been said that good intelligence and hard work are the only definable prerequisites for success. I know from experience that the men in this industry possess both qualifications, so I do not think it is too much to expect these problems to be solved in the not distant future.

Place of Natural Gasoline in Increasing Volatility of Motor Fuels

By Wm. E. Green

N. P. N. STAFF WRITER

LOS ANGELES, Nov. 26

THAT a blended motor fuel containing 40 per cent, and under some conditions as high as 50 per cent of natural gasoline, tends to the more perfect and satisfactory operation of a motor car, was the thought brought to the members of the California Natural Gasoline Association by Dr. George Granger Brown, director of research for the Natural Gasoline Association of America.

This was at the second annual fall meeting of the California association held in Los Angeles, Nov. 13 and 14 at the Biltmore Hotel. The first day was given to the presentation of three technical papers prepared by committee associations. The second day was given over to the talk by Dr. Brown and discussion following. Dr. Brown is professor of chemical engineering, University of Michigan.

A. V. BOURQUE
Secretary of the Natural Gasoline Association of America

Although Dr. Brown gave over much of his time to discussing vapor pressure of pure hydrocarbons, volatility of motor fuels, etc., the natural gasoline engineers were deeply interested in his technical discussion by means of increasing volatility in various fuels. The speaker said auto owners were principally interested in a fuel that would start a cold motor in the morning and that had acceleration advantages.

Dr. Brown said a fuel was 50 per cent effective when that percentage of fuel passed from the carburetor to the cylinders and burned immediately after starting the motor, regardless of the percentage that vaporized; and he called this satisfactory, although a fuel that was 60 per cent effective was still better in that the motor would start easier and would have better acceleration, while 85 per cent he termed as perfect.

It was in this connection that Dr.

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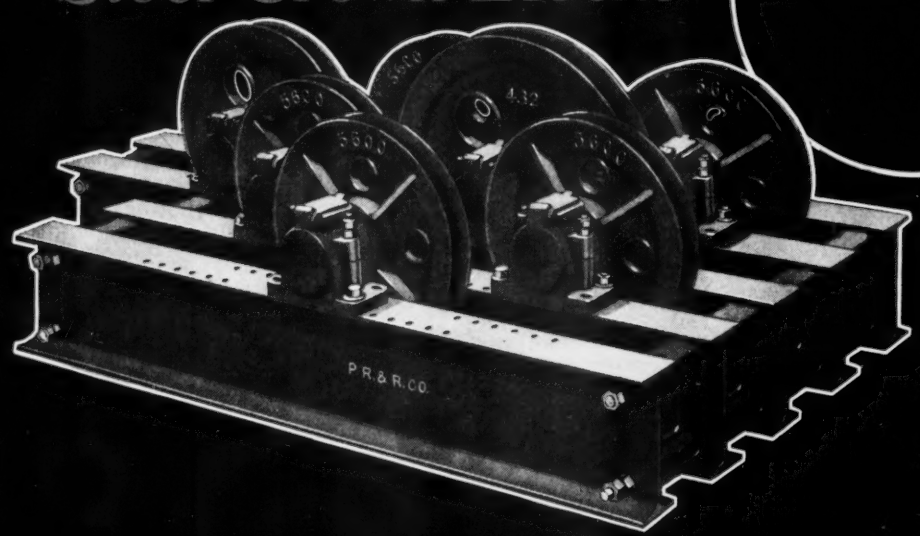

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PARKERSBURG EQUIPMENT THE STANDARD FOR COMPARISON THE WORLD OVER

Brown discussed the percentage of natural gasoline that could be successfully used in a blended motor fuel. He said that a 30 per cent blend made a good fuel, but 40 per cent was better, making far quicker starting with a cold motor and better acceleration. During the afternoon discussion, J. A. Campbell asked Dr. Brown what he thought about lowering the end point of natural gasoline, saying some refiners were asking for a 300 to 350 end point product.

Dr. Brown replied that he saw no advantage in any end point lower than 375 for natural gasoline, but suggested that equipment could be further improved to keep out of the product as much absorption oil as possible.

At the 1927 fall meeting of the California association, Dr. Brown discussed at some length the cause and effect of vapor lock, and this year he reviewed the subject. He said a hot carburetor would assist in bringing about this condition, and also said his investigations had convinced him that this condition in some cars could be avoided with a pressure gasoline feed.

At the first day's session, President George L. Ratcliffe, in his annual address, cautioned the industry as to the needs for either decreasing the production of natural gasoline in California or increasing its utilization.

He stated that the average production of natural gasoline in California now, is approximately 3.8 gallons to each barrel of light crude oil produced, and that an increase might be expected. Mr. Ratcliffe said he felt the industry could save itself from extreme ups and downs by anticipating the law of supply and demand as much as possible. He also called attention to the growth of the association to a point where it now has 600 members.

At the morning session of the first day, a paper entitled "Use of Gas and Gasoline Analysis in the Practical Operation of a Natural Gasoline Plant," prepared by the gas and gasoline analysis committee of the association, was read by Walter J. Podbielniak. The paper called attention to the necessity for accuracy in sampling the gas and gasoline for analysis. The application of the results of the analysis were given showing the possibility of making use of gas analysis for plant survey.

To summarize the discussion of this paper, fundamental analysis of natural gas and gasoline may be used for the accurate and absolute determination of potential production of products from a wet gas, to determine plant and equipment efficiency, and to analyze plant performance. It is possible and desirable, when using fundamental analysis, to make close material balances for the individual hydrocarbons entering and leaving equipment or plant, in order to determine the

DR. G. G. BROWN
Associated with the Natural Gasoline Association of America and chemical engineering professor at the University of Michigan

dependability and accuracy of the test and to trace the errors involved. Applications of fundamental analysis to plant and equipment surveys and to various calculations made possible by it were presented. The further application of both fundamental analysis and calculation of composition changes is advised.

Another paper entitled "The Determination of the Vapor Pressure of Natural Gasoline" as prepared by the vapor pressure committee of the association, was presented by H. N. Wade of the J. A. Campbell Co.

It described some of the experimental work conducted on vapor pressure by several companies, indicating the lines along which such work is now progressing. The paper stated that two methods have been used as absolute checks against various types of practical vapor pressure testing instruments: namely, computation from careful analysis and comparison with a very large bomb with a very small vapor space. It was stated that fairly good agreement is found between the two new methods.

E. G. Ragatz of the Union Oil Co. presented a paper entitled, "A Graphic Analysis of Distillation Problems" dealing with the graphical analysis of problems in the design and operation of steam stills as applied to absorption plants. This paper was very complete and extremely technical, giving numerous examples of the calculations required. A number of curves were shown and their uses described.

President Ratcliffe presided the first day, while A. V. Bourque, secretary of the Natural Gasoline Association of America, presided at the morning session of the second day. R. E. Beckley of the Standard Gasoline Co., presided in the afternoon.

The total registration for the fall meeting was 535 while the attendance was estimated to have been approximately 600. The meeting closed with a banquet at the Biltmore Hotel. Le Roy Dawson acted as chairman.

Among the out of town visitors attending the fall meeting were A. V. Bourque, Tulsa, secretary of the Natural Gasoline Association of America; J. M. Sands, Tulsa, Phillips Petroleum Co.; A. I. Sellers, Tulsa, Skelly Oil Co.; James A. Morgan, Tulsa, Smith Separator Co.; E. N. Layfield, Vernon, Ohio, Hope Engineering Co., and Norval White, Pacific Coast Representative, American Petroleum Institute, San Francisco.

Magnolia Pipe Line Runs For Sept.-Oct.

HOUSTON, Nov. 23.—Magnolia Petroleum Co., pipeline department, announces from Dallas headquarters the following crude oil runs for October, which are shown in comparison with September:

	September	October
Hewitt-Graham	142,477.73	150,789.10
Healdton	227,175.08	240,131.53
Cushing	119,813.47	123,981.01
Yale	44,190.10	48,968.19
Duncan	41,309.71	43,442.23
Augusta	34,906.10	37,810.46
Walters-Beaver Creek	8,622.00	8,526.21
Burbank	.....	88.73
Wewoka	1,017,318.77	1,294,649.18
Seminole	91,078.50	129,662.29
Total Okla.-Kans.	1,726,891.46	2,077,958.93
Archer	27,086.35	28,897.82
Burkburnett	65,664.27	70,186.53
Comanche	18,484.59	18,165.00
Electra	99,350.84	101,189.71
Corsicana, heavy	8,542.77	9,618.90
Corsicana, light	11,977.03	23,031.20
Henrietta	2,737.14	2,355.85
Howard County	30,601.48	29,752.06
Luling	340,610.11	350,275.54
Lytton Springs	46,948.37	45,252.27
Mexia-Wortham	26,588.93	24,617.04
Mirando	145,903.99	271,060.99
Olden	9,424.07	9,909.38
Panhandle	99,678.35	99,012.32
Panola	1,178.40	1,283.21
Stephens	7,276.29	8,646.23
Thrall	1,086.14	984.11
Gulf Coast	421.02	847.92
Crane-Upton	345,068.93	343,558.95
Glasscock	117,846.38	158,809.48
Winkler	76,527.44	103,009.91
Total, Texas	1,483,002.89	1,700,464.42
Haynesville	2,870.79	2,256.95
Bull Bayou	42,840.91	42,506.06
Cotton Valley	22,075.32	29,218.30
Pine Island	30,229.49	29,372.67
Hackberry	51,613.30	56,497.21
Total Louisiana	149,629.81	159,451.19
El Dorado, light	14,160.99	13,336.79
East El Dorado	3,498.23	3,789.59
Smackover	79,632.92	79,090.60
Rainbow	70,977.04	77,690.48
Total, Arkansas	168,269.18	173,907.46
Grand Total	3,527,793.34	4,111,782.00

OKLAHOMA-KANSAS

Report for October		Dly. Avg.
Runs	2,340,076	75,486
Shipments	2,005,843	64,705
Total stock	9,136,351	.....

TEXAS

Wichita, Wilbarger, Archer,		
Runs	200,928	6,482
Shipments	170,267	5,492
Petrolia,		
Runs	2,386	77
Shipments	2,386	77
Eastland, Stephens		
Runs	36,711	1,184
Shipments	.....	.....

Total stock—233,710—North Central Texas field.

Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

Charles D. Vertrees, 420 East French Place, San Antonio, is now representing Marland Production Co. in southwest Texas. He formerly was sub-surface geologist and paleontologist for the same interests at San Angelo.

* * *

N. W. Hunter, secretary to the refinery manager of The Texas Co., at New York City, has resigned to accept a position with the Moody-Seagraves gas interests. Mr. Hunter had been with The Texas Co. since 1921, when he was engaged as a stenographer in the comptroller's department.

* * *

J. Elmer Thomas, Fort Worth geologist and petroleum engineer, now associated with the stock brokerage house of Fenner & Beane, made a business trip to New York City in advance of the American Petroleum Institute meeting at Chicago.

* * *

J. E. (Brick) Elliott, president of the Elliott Core Barrel Co., Los Angeles, and first vice-president of the American Association of Petroleum Geologists, made a business trip to Houston the latter part of November.

* * *

Ernest H. Wilcox, chief engineer of the Pan American Western Petroleum Co., for the last five years, has opened offices at Los Angeles as a consulting engineer. Before joining the Pan American organization he had been in private engineering practice from 1906-1923. Previously he was assistant engineer with the Butte & Plumas Railway and engineer for the Associated Oil Co.

* * *

Dixie Oil Co., Inc., direct producing subsidiary of the Standard Oil Co. of Indiana, is branching into Kentucky territory. It recently transferred R. B. Grigsby of its geological staff at Wichita Falls, Texas, to Owensboro, Ky.

* * *

R. A. Reeder, general purchasing agent of the Moody-Seagraves gas interests, is a new member of the Purchasing Agents Association of Houston.

* * *

D. W. Reid, general manager of the East Coast Oil Co. of Mexico, S. A., subsidiary of the Southern Pacific railroad, made a business trip to San Francisco in November.

R. A. WILSON

R. A. Wilson of the Guiberson Corp., Dallas, is a deep student of two subjects, namely, the manufacture of oil well drilling equipment and golf. He has taken great interest in the standardization movement, giving freely of his time and effort to the American Petroleum Institute work. It is only necessary to bring up the subject of equipment standardization to get his enthusiastic attention. Regarding golf he is more reticent. His friends say anybody who can consistently pile up as good scores as Mr. Wilson has no need to be otherwise.

* * *

Messrs. O. R. Tisdale and H. E. Stocking, civil engineer and assistant, respectively, are now working in west Texas for the Texas Pipeline Co., but call Fort Worth their headquarters. Mr. Tisdale was transferred from Oklahoma; Mr. Stocking is just beginning his service with the company.

Safety first is applicable through insurance, according to Paul Hartzel of the Delaware River terminal of The Texas Co. Writing in support of the company's policy of carrying certain amounts of insurance for employes, depending on term of service and salary, he says:

"We have been taught and shown a great deal of how to apply safety to our daily work and it now seems appropriate that some thought be given to the safety of our family in case we are unexpectedly taken from life's picture. Not one of us would let a day go by without fire insurance on the home or accident insurance on the automobile, yet very few of us make an effort to carry adequate life insurance . . . . It behooves each of us to give real consideration to safety of our family through insurance."

* * *

A. E. Hartman, geologist, is now associated with C. H. Bailey, with offices at 909 Milam building, San Antonio. They are engaged in leasing, royalty and drilling propositions.

* * *

Turner Valley operations of Imperial Oil., Ltd., in Alberta, Canada, are now receiving the entire attention of Prentiss D. Moore, geologist, who has been watching developments there for several months.

* * *

W. A. Baker, Jr., assistant chief geologist of the Transcontinental Petroleum Co., subsidiary in Mexico of the Standard Oil Co. of New Jersey, is spending a six weeks' vacation in Baltimore and other eastern cities. He left Tampico for the States the first week in November.

* * *

C. C. Hummer has replaced R. L. Andrews, Jr., as Gulf Coastal district superintendent of the Pure Oil Co.'s producing department in Texas and Louisiana.

* * *

Dwight Mitchell of the Dallas general office oil runs department of the Magnolia Petroleum Co. has been transferred to Earlsboro, Okla., where he will act as assistant to Superintendent J. W. Tipton.

* * *

T. O. Bosworth, petroleum geologist and engineer of Spratton, Northampton, England, is making temporary headquarters at Santa Elena, Ecuador, while working in northern countries of South America.

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Byron Jackson Buys 5 California Equipment Companies

LOS ANGELES, Nov. 23

FIVE important manufacturers of oil tools in California, and the Byron Jackson Pump Co. of Los Angeles and San Francisco, are the principals in an amalgamation recently completed in Los Angeles.

The new organization's firm name will be Byron Jackson, Inc. It will operate as three major divisions—the oil tools division, the disk bit division, and the pump division.

The former Wilson & Willard Manufacturing Co. will cease to exist. The Wilson Oil Tools Corp. will continue to function as the oil tools division of the Byron Jackson, Inc. No change is contemplated in the executive or technical staffs, and the oil tools division of Byron Jackson, Inc., will function under the same chiefs which operated the Wilson & Willard concerns; E. Clem Wilson, president; Webb W. Wilson, vice president and manager; and G. B. Wilson, treasurer. The large Wilson plant at Los Angeles will remain the headquarters and factory of the oil tools division.

The disk bit division of Byron Jackson, Inc., will include three formerly separate companies, the Rotary Disc Bit Co. of Los Angeles, the U. S. Tool Co. of Long Beach and the Craig Oil Tool Co. of Long Beach. In this division will be associated executives of the former companies. They are W. W. Cole, formerly with the Craig Oil Tool Co.; M. G. Brumbly, formerly of the Rotary Disc Bit Co., and W. T. Woods, formerly of the U. S. Tool Co.

Headquarters of the disk bit division will be at 2150 E. Slauson avenue, Los Angeles.

The pump division will maintain offices both at Berkeley and Los Angeles and will be largely under the guidance of W. N. Beadle, for many years an executive of Byron Jackson.

The officers of Byron Jackson, Inc., as named in the announcement, are J. B. Keating, president, Robert Schurman, executive vice president and director of all divisions, and H. J. Ellen, secretary-treasurer.

Byron Jackson, Inc., was established in 1872 as an iron works, and shortly began making pumps of various descriptions.

Wilson & Willard Manufacturing Co. was incorporated by the Wilson brothers in 1907, having been established in 1904.

Under the guidance of E. Clem Wilson, the firm developed many basic types of elevators, tongs and underreamers.

Mr. Wilson is credited with the invention of the center-latch and the side-door types of elevators, now common in the oil fields. More than a generation ago, he invented an improved underreamer with a one-piece body, which has been used in the oil fields of the world for more than 20 years. Also, he introduced the spring-latch feature in elevators and tongs. The Rotary Disc Bit Co. was established in 1912 in Bakersfield and moved to Los Angeles 10 years ago. This concern controlled basic patents in the manufacture of disk bits. The U. S. Tool and the Craig Oil Tool companies have operated in the Long Beach region for many years, supplying disk bits and other oil field specialties.

A reciprocal licensing arrangement concluded with the Patterson-Ballagh Corp. of Los Angeles for the adoption of Bettis protectors on the B. J. antifriction tool joints and collars under the Hopkins and Bettis patents, allows the disk bit division to cooperate with Patterson-Ballagh in the distribution of Bettis protectors and in turn allows Patterson-Ballagh the same privilege of distributing the tool joints and collars.

WEBB W. WILSON
Vice president and manager of Wilson Oil Tools Corp., now the oil tools division of Byron Jackson, Inc.

E. CLEM WILSON
President of Wilson Oil Tools Corp. and founder of Wilson & Willard Mfg. Co., now the oil tools division of Byron Jackson, Inc.

M. G. BRUMBLY
Who will be identified with the disk bit division of Byron Jackson, Inc.

ROBERT SCHURMAN
Executive vice president in charge of all divisions, Byron Jackson, Inc.

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Ford Reelected Head Of Va. Jobbers

RICHMOND, Va., Nov. 24.—An address by James A. Gilmore, secretary of the American Oil Men's Association, on marketing ethics, concluded the autumn meeting of the Independent Oil Men's Association at Lynchburg.

P. S. Ford, of Martinsville, was reelected president, with M. B. Whiting, of Clifton Forege, as vice-president, and Harry Sherby, of Washington, as second vice-president.

New members of the board are Paul Himmelforb and T. J. Crowell, both of Washington, D. C.

Mr. Gilmore spoke of the method by which the state requires distributors to collect and pay the gasoline tax with no compensation. One per cent of the tax is allowed arbitrarily by the commission.

It was brought out also by the speaker that in view of the distribution system in the state, oil men should organize so they would be in a more advantageous position to present their problems to state legislative bodies, and to urge adoption of laws that will remove what he claimed to be hardships now imposed on both the consumer and distributor.

Dealers argued that they should be taxed on the gasoline they sell and not what they purchase, and that there should be a change in the method of collecting these taxes.

Richmond was selected for the spring meeting.

Mexican Seaboard May Refinance

NEW YORK, Nov. 17.—Mexican Seaboard Oil Corp. is expected to do some financing before many weeks in connection with the retirement Sept. 1, 1929, of $3,500,000 10-year 7 per cent debentures. The outlook for this company at present is the best in several years because of its Ketleman Hills development in California. It also has contracted to sell its dry gas from the Button Willow district to the Pacific Gas & Electric Co. which will sell the gas in San Francisco.

NEW YORK, Nov. 22.—Officials of The Texas Corp. are on a tour of inspection of the corporation's middle west and Mid-Continent properties, which will extend as far as Port Arthur, Texas. The tour is being made partly by rail and partly by air. The party includes: R. C. Holmes, W. S. S. Rodgers, T. Rieber, C. B. Ames, D. O'Garrio, and F. P. Manley.

G. A. Young, Jr., and Jake Cobb of the oil purchasing department of the Magnolia Petroleum Co., Dallas, spent their vacations in New Mexico.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

Henry W. Ralph 749.

"Accounting Methods for Refineries, Article 7"

National Petroleum News, Sept. 19, 1928, pp.69-72.

This article takes up factors necessary for keeping operating reports and cost records for stills. The kind of data which is valuable for operating purposes is somewhat dependent on the type of still employed. For the batch still it is important to know just how much time is consumed in each part of the complete operation, as time lost in any stage results in a reduction of the possible throughput and a consequent increase in the cost. For the continuous type still it is important to know the hourly rate of throughput so that there will be no decrease in the rate with a consequent increase in cost.

Robinson, J. F., and Montgomery, J. G., Jr. 420.3

"Deep Drilling in the Appalachian Field by the Cable-tool Method"

A paper read before the American Petroleum Institute, Division of Development and Production Engineering, Colorado Springs, June 15, 1928.

Printed in A.P.I. Development & Production Engineering Bull. 202. Also in the Oil Weekly, June 29, 1928, p.37, and in the Oil & Gas Journal, June 21, 1928, p.64.

In the Appalachian region of Pennsylvania, a number of deep wells have been drilled to intersect horizons productive of oil and gas in New York and Ohio at shallower depths. The authors here describe methods used in meeting unusual problems in the drilling of some of these deep holes, some of which have attained depths in excess of seven thousand feet. Fishing operations are frequent and difficult, occasioned in many instances, by gas blow-outs of short duration. Individual strings of casing were so heavy that they had to be lowered in sections and coupled in the well with the aid of a special "letting-in" tool. Friction between the casing and drilling cable results in damaging of both. In the drilling of one 7,183' hole, 83,500' of drilling cable was used. High ground temperatures at great depths result in abnormal thermal elongation of casing strings and a special depth-measuring device was designed to run below a bailer. Gases high in sulfur have at times compelled drillers to wear masks. Wells often deviate appreciably from the vertical. Tests have in some instances indicated deviations of as much as 50' per 100' of depth. Some of the formations tend to cave, and resort is had in some cases to cementation of the caved material and redrilling. Bailers are run below a set of jars to assist in removing them in the event of a cave. Temperature studies have shown a gradient ranging from 1.3° to 1.7°F. per hundred feet of depth. Temperatures were lower opposite gas sands due to expansion of gas, and opposite salt-bearing formations, due to solution of the salt in the drilling water. Drilling time on these wells ranges from 2½ to 6½ years per well.

National Petroleum News 607.

"How to Correct Oil Gravity and Volume for Temperature Changes, Part 2"

National Petroleum News, Sept. 19, 1928, pp.74-77.

Information, including tables, from Circular 154 of the U. S. Bureau of Standards passed along in handy form with some comments and interpretation.

Zook, R. T., 537.

"Value of Core Studies in Fluid Drives"

A paper read before the Eastern Section of the American Petroleum Institute, Division of Development and Production Technology, Bradford, Pa., May, 1928.

Printed in A.P.I. Production Engineering Bull. 202. Also, in National Petroleum News, July 4, 1928, p.50; Oil Field Engineering, Sept., 1928, p.30; Oil Weekly, July 13, 1928, p.29; and Oil & Gas Journal, July 12, 1928, p.90.

This paper describes the efforts of an oil company to increase production by water-flooding and air-driving on a property in the Kane Field, Pennsylvania. Efforts to apply the water-flooding process used so successfully in the Bradford field, failed, in that oil production was not materially increased and water spread rapidly, from well to well, through the horizon thought to be productive of oil. In later efforts to apply a compressed-air drive, better success was had in increasing oil production, but different portions of the productive horizon seemed to take air at extremely variable rates.

The results of these tests suggested the advisability of securing more accurate information concerning the nature of the productive horizon, and accordingly, a well was drilled and the productive horizon cored with a cable-tool core-barrel. A very satisfactory core was obtained, which indicated that only a small portion of the zone formerly thought to be oil-bearing was really productive, and that a very porous, barren stratum above this permitted free movement of water, gas and oil. Tests made with packers on tubing, which permitted applying pressure to particular portions of the sand, confirmed the core data. On the basis of this information, packers were set in the wells to confine the air pressure to the oil-bearing portion of the sand, and very satisfactory increases in oil production were secured.

The core-barrel used in this work is described in detail, and several illustrations of its component parts are given. Experience with it on several wells indicates that it is capable of securing nearly 100% of core for the type of formation in which it was used. Progress averaged 7-feet per day.

(Cross-index under 538, and 424.7.)

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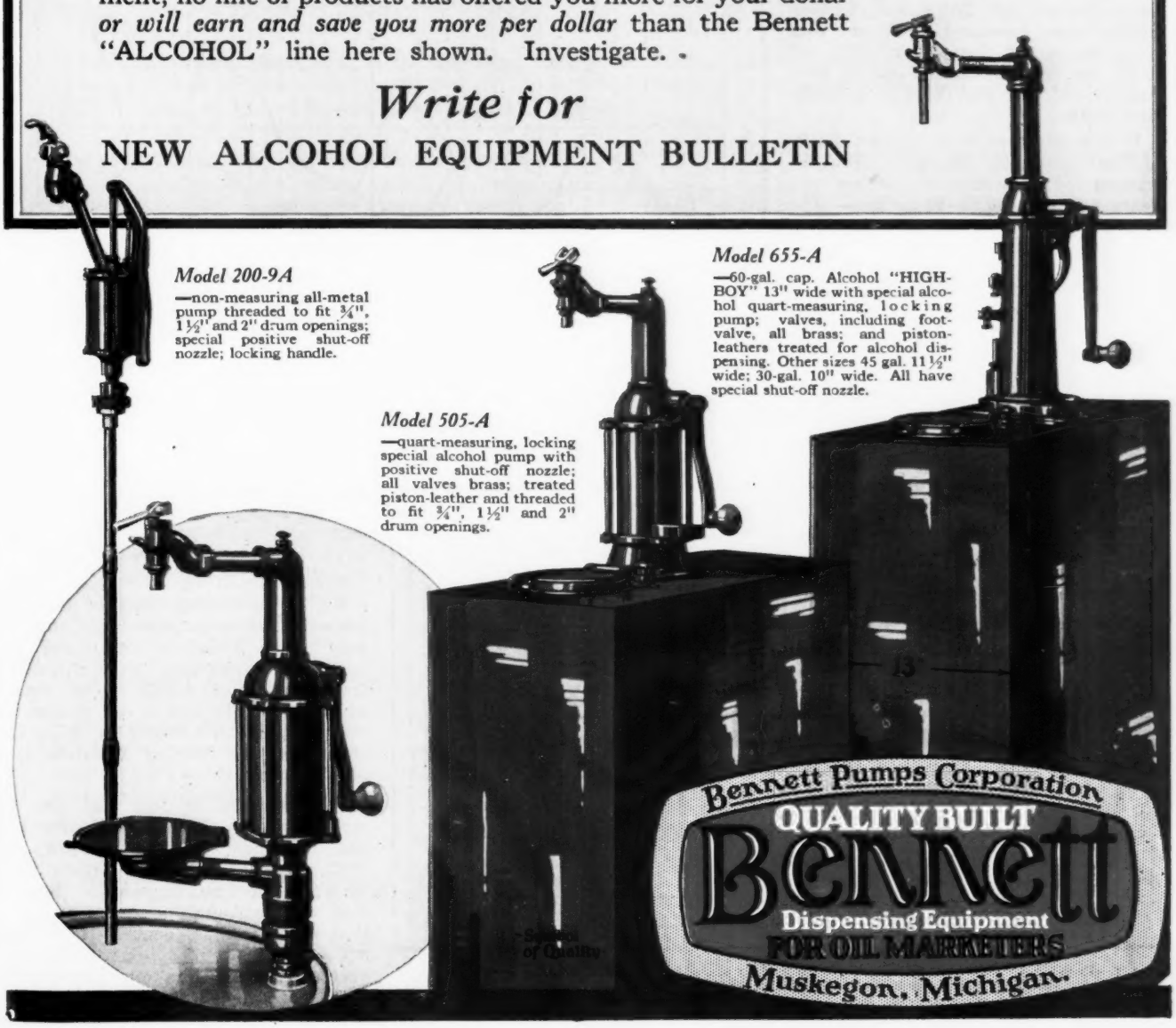

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—quart-measuring, locking special alcohol pump with positive shut-off nozzle; all valves brass; treated piston-leather and threaded to fit ¾", 1½" and 2" drum openings.

Model 655-A

—60-gal. cap. Alcohol "HIGHBOY" 13" wide with special alcohol quart-measuring, locking pump; valves, including foot-valve, all brass; and piston-leathers treated for alcohol dispensing. Other sizes 45 gal. 11½" wide; 30-gal. 10" wide. All have special shut-off nozzle.

Fuel and Gas Oil Stocks Show Large Increase East of California

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Nov. 23

IN THE last 19 months stocks of fuel and gas oil at refineries east of California have increased in 16 months and have decreased only three months, according to figures of the U. S. Bureau of Mines. In the two-year period ended Sept. 30, fuel and gas oil stocks have increased in 17 months and decreased in only seven months.

Present fuel and gas oil stocks east of California total 40,067,000 barrels. This is an increase of 38.11 per cent over the low point this year at the end of February when the stock figure stood at 29,011,000 barrels. Stocks have increased 26.67 per cent since the end of September, 1927, and 81.31 per cent since the end of February, 1927, the low point in holdings that year.

In the Mid-Continent district stocks of fuel and gas oil have been increased in 14 months of the last two years and reduced in 10 months. The rate of increase in the Mid-Continent was not so large in 1927 as in the remainder of the refining districts east of California. But since April 1, this year, the rate of increase has been much larger in the Mid-Continent than in the remainder of the refining groups east of California.

At the end of September the U. S. Bureau of Mines reported fuel and gas oil stocks at Mid-Continent refineries totaled 10,497,000 barrels. This was an increase of 58.7 per cent over March 31 stocks which totaled 6,614,000 barrels. At the end of September, 1927, stocks totaled 7,906,000 barrels so that present stocks represent an increase of 32.77 per cent. Current stocks are 76.74 per cent more than the low figure of 5,939,000 barrels reached Feb. 28, 1927.

In the period of withdrawal from Nov. 30, 1927, to March 31, 1928, stocks of fuel and gas oil in the Mid-Continent field were reduced only 1,701,000 barrels. In the period of accumulation between April 1 and Sept. 30, stocks have increased 3,883,000 barrels.

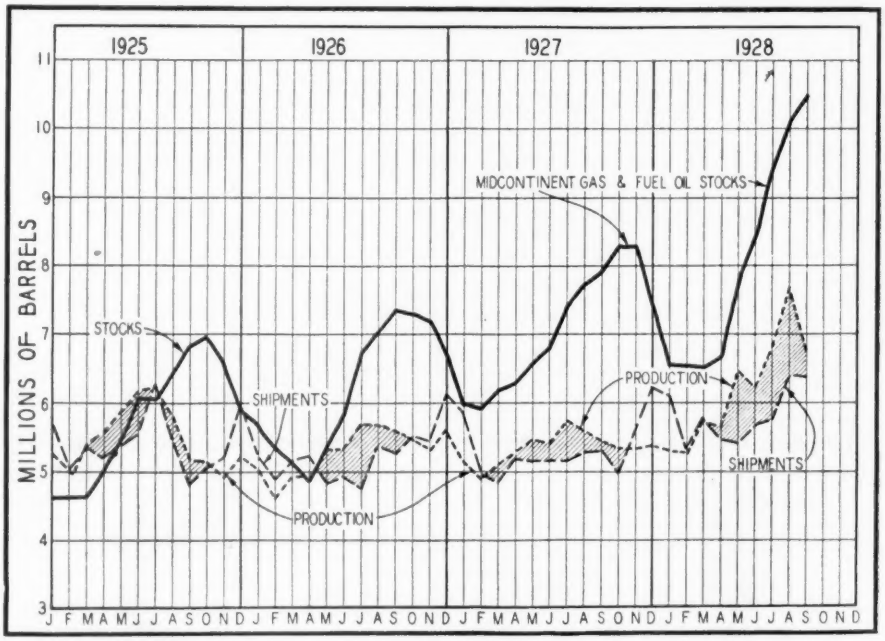
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Fig. 1—Trend of fuel and gas oil stocks in the Mid-Continent Field. Monthly volume of production and shipments are shown. Shaded area represents additions to stocks. Data are from U. S. Bureau of Mines reports.

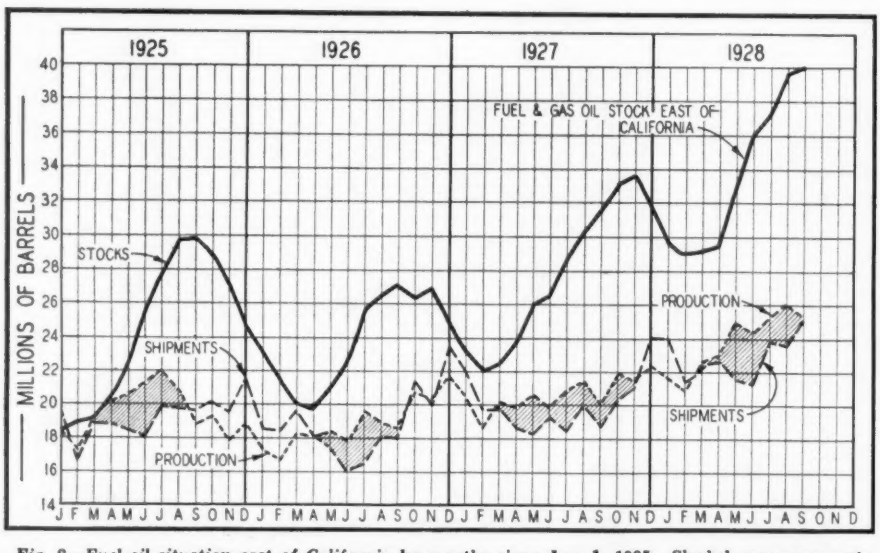
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Fig. 2—Fuel oil situation east of California by months since Jan. 1, 1925. Shaded area represents additions to stocks, actual volume of stocks at the close of each month are shown by solid line. Data are from U. S. Bureau of Mines reports

Fig. 1 shows the trend of fuel and gas oil stocks in the Mid-Continent field since January, 1925, and the level of production and shipments from month to month. The shaded area represents excess of production over shipments. Fig. 2 is a similar chart for all refining districts east of California.

The increase in fuel and gas oil stocks both in the Mid-Continent and the remainder of the territory in 1927 may be attributed largely to a low rate of cracking caused by the fact that gasoline prices fell so low that many refiners decided they could not show a profit by operating their pressure stills. Gas oils particularly were placed in storage for cracking at

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Baby of the industry three years ago, the automobile lift is now a husky member of the Oil Marketer's family, ready to do a man's work in creating daily profits.

4 years of practical experience in the operating laboratories of merchandisers of petroleum products, under the watchful eyes of men educated in the industry, have netted sound operating principles which give STANDARD LIFTS a place in Service Station Technique second to none.

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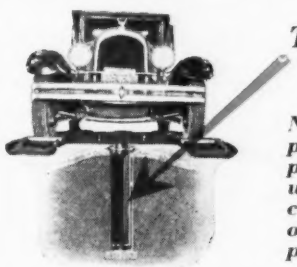
4th. Noiseless and Safe from danger of dropping.
5th. Clean — no seepage or oil puddle with attendant unsightliness.
6th. Workmanlike appearance . . . . does not resemble farm machinery.
7th. Lowest installation cost.

Pays for itself as you pay for it!

So thoroughly does each unit in the STANDARD LINE demonstrate its money-making possibilities that we have developed a plan whereby any filling station or garage can install one immediately and begin to increase profits.



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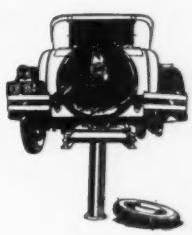
Oil-Electric (known as the OILDRAULIC)
AIR (known as the AIRDRAULIC)
} *Drive-On and Free-Wheel*



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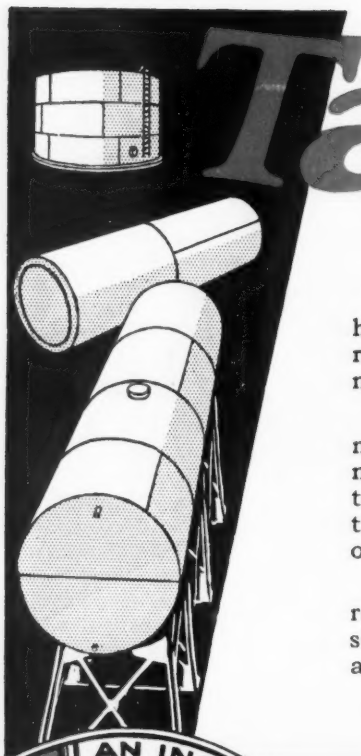

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Our location among the coal and iron mines of the South keeps our cost of materials low. We pass this saving on to you and always keep Birtank quality the best. Birtank quality is the standard of the South.

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BUFFALO, NEW YORK

"The House of Drum Faucets"

a time when gasoline prices should reach a higher level.

An indication of this situation is seen in the weekly refinery reports of this publication covering about 60 per cent of the operating capacity of the Mid-Continent. In these reports a separation is made between gas oil and fuel oil which is not done by the Bureau of Mines in its monthly reports covering the entire country.

Dec. 31, 1926, gas oil stocks at refineries in the Mid-Continent that report to NATIONAL PETROLEUM NEWS, totaled 46,971,000 gallons and fuel oil stocks were 89,524,000 gallons. Dec. 30, 1927, the same group of plants reported stocks of 67,776,000 gallons of gas oil, an increase of 20,000,000 gallons, and 100,329,000 gallons of fuel oil, an increase of 11,000,000 gallons.

This year the tendency of gas oil stocks has been to recede. Stocks of that product Nov. 9 at all reporting plants were down to 56,288,000 gallons, a reduction of 11,500,000 gallons. But fuel oil stocks at the same plants totaled 189,173,000 gallons, an increase of approximately 89,000,000 gallons in 11 months.

The greatest factor in the increase in heavy oil stocks this year, of course, has been the development of the heavy crude fields of West Texas which produce a large percentage of fuel oil. The low price competition of these fuels has depressed the entire fuel oil market and caused some refiners equipped with pressure stills which will handle heavy oils, to buy some crackable fuel oil for storing against future operations. This could be done only where the fuel oil was available on low freight rates or could be moved by pipe line.

At present there is no indication that fuel oil stocks in the Mid-Continent particularly, will be lowered appreciably during the coming season of peak consumption.

NATIONAL PETROLEUM NEWS reports have shown a steady increase in fuel oil stocks during October and the first week of November whereas a year ago reporting plants showed no increase in stocks in that period. The prospect is that Mid-Continent refiners will enter the period of accumulation next spring with much larger stocks of fuel oil than they did this year.

With west Texas a probable factor for an indefinite period in the future it appears necessary for refiners to burn as much fuel as possible under their own stills in place of other fuels, to promote the use of fuel oil for domestic heating and manufacturing purposes and to crack heavy oils as fully as possible with equipment now on hand or which may be installed as conditions appear to warrant.

ON THE LAZY BENCH

The Last Word

A colored preacher was describing the wonders of the hereafter. "You all is seen molten iron runnin' out fum a furnace, ain't you?" he asked.

The congregation silently assented.

"Well," continued the preacher, "in de place what I'm talkin' 'bout dey uses dat stuff fo' ice cream."

—The Pure Oil News

* * *

Same In Our Town

Stranger: Tell me, have any big men ever been born in this city?

Native: Nope, only babies.

—The Marion Line

* * *

A tramp knocked at a door and asked the lady for something to eat.

"Yes," she assented, "if you'll chop me a load of wood first."

"Madame," retorted the tramp with dignity, "I asked for a donation—not a transaction."

—Skelly News

* * *

Egotism is the anæsthetic provided by Nature to relieve the pain caused by being a d— fool.

—The Power Specialist

* * *

"I've never kissed a girl in all my life," remarked the painfully proper young man.

"Well, don't come buzzing around me," announced the little flapper. "I'm not running a prep school."

—The Loreco Diamond

* * *

The doctor had just been visiting an Irish patient, and as the man's wife was showing him out he said to her, "Your husband's not so well today, Mrs. Maloney. Is he sticking to the simple diet I prescribed?"

"He is not, sorr," came the reply. "He says he'll not be after starvin' himself to death just for the sake of livin' a few years longer."

—The Diamond

* * *

Too Horsey

Teacher—What word is the opposite of misery?

Class—Happiness.

Teacher—What is the opposite of woe?

Class—Giddap.

—The Power Specialist

* * *

My Word! How Inconsiderate!

Voice over Wire: "Madam, your husband has been run over by a truck!"

"Good Heavens! On the afternoon of my bridge party!"

—The Marion Line

PRODUCING REFINING TRANSPORTING MARKETING
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Service . . .
A wire or letter will bring quotations
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64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing
24-26 Fuel Oil Blackwell)
Cannon Ball Service, like Cushing Petroleum Products themselves, is the difference between the ordinary and the Thoroughbred.
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Along the Air Lanes

J. E. (Brick) Elliott of Los Angeles takes time off from directing the affairs of his various oil companies and the Elliott Core Drilling Co. to shoot a few ducks. The picture shows him exhibiting the result of a day's hunt at a hunting club near Bakersfield, Calif., with his airplane as a background. Seldom does a week go by that Mr. Elliott does not give some of his oil friends a ride in his plane

Continental Oil Co., of Denver, has engaged the Fairchild Co., Inc., to make an aerial map of Lea and Eddy counties, southeastern New Mexico, where its producing department is active in exploratory work. Aerial mapping will show changes in surface formations of aid to the Continental's geological department, and will also establish survey lines in parts of the area. Because of the general lack of relief in the topography of the region, when viewed from the ground, all clews to conditions that may be shown by the aerial camera will be found important.

XXX

The Mead & Phillips Drilling Co., of Tulsa, has purchased a Spartan biplane for use in supervising drilling operations in several oil fields. The plane is a duplicate of one bought by the Noble Olson Drilling Co., according to J. F. Nagle, sales manager of the Spartan Aircraft Co.

XXX

Ground was broken recently by the Richfield Oil Co. for a model aviation service station at the new Metropolitan airport in Los Angeles. The station will contain many innovations for servicing commercial and transport planes and will probably be one of the most completely equipped stations of its kind.

President B. E. Hull of The Texas Pipeline Co. left Houston, Nov. 7, by airplane for San Antonio, where he picked up J. H. Lapham, large stockholder in The Texas Corp., before proceeding on a flight to Tulsa. At their Oklahoma destination, these men joined President R. C. Holmes and other officials of The Texas Corp., who had reached Tulsa on their annual inspection trip of southwestern properties.

XXX

The design on new 5-cent air mail stamps has brought many inquiries to the post office department.

Authorities say the design represents the highest airway beacon in the world, which is situated on top of Sherman Hill, 30 miles west of Cheyenne, Wyo. on the Boeing air transport route between San Francisco and Chicago. The beacon stands 10,000 feet above sea level.

These beacons have been supplied the government by the International Derrick & Equipment Co., and are manufactured in its plants at Columbus, O. and Torrance, Calif.

XXX

To be there first—whether it's discovering America or flying across the Atlantic—has ever been the aim of history makers.

Among those who can lay claim to such distinction is the Shaffer Oil & Refining Co., Chicago, whose sister company, the Louisville Gas & Electric Co., furnished fuel for the return voyage of the Graf Zeppelin. The fuel was ethane, obtained by rectifying or stabilizing natural gasoline, according to C. T. Fantozzi, assistant general sales manager of the Shaffer company.

The gas has a specific gravity of 1.04 when compared with air. One million cubic feet of this new fuel was manufactured by the Kentucky Oxygen-Hydrogen Co. at a plant especially built for the purpose at Winchester, Ky., and was shipped to Lakehurst, N. J., on Oct. 1. R. W. Bottoms, formerly a lieutenant in the U. S. Navy connected with helium gas explorations, supervised the making of the gas.

Lubricating oil for the return trip was furnished by the Tide Water Oil Co., New York.

XXX

Union Oil Co.'s aviation representatives, W. E. Kerry and Roy Harding of the southern and central divisions respectively, recently attended the dedications of the Lompoc and Maricopa, California, airports, two of the Union planes being used for the trips. The Union recently purchased two new Eagle Rock planes powered by Hallett air cooled motors.

XXX

Richfield Oil Co.'s blue and gold trimotored Fokker cabin cruiser recently flew from Seattle, Washington, to San Francisco, California, with C. M. Fuller, vice-president of Richfield; J. C. Graves, manager of sales; I. N. Randall, supervisor of Richfield's northern territory, and Miss Ethel Murphy, who took dictation enroute, as passengers.

XXX

J. C. Blake, sales manager of Stoody Co., Whittier, Calif., and A. C. Stewart, purchasing agent for the same company, have completed an 8000-mile cruise in the Stoody Fokker Super Universal monoplane, piloted by Vernon Dorrell, Stoody Co. pilot. The plane stopped at a number of cities, going as far east as New York and returning by way of Tulsa so the occupants could attend the recent petroleum exposition in that city. R. W. Willis, manager of Stoody Product Sales Company, of Tulsa, returned with the Stoody party to visit the company's plant at Whittier, as a guest of W. F. Stoody.

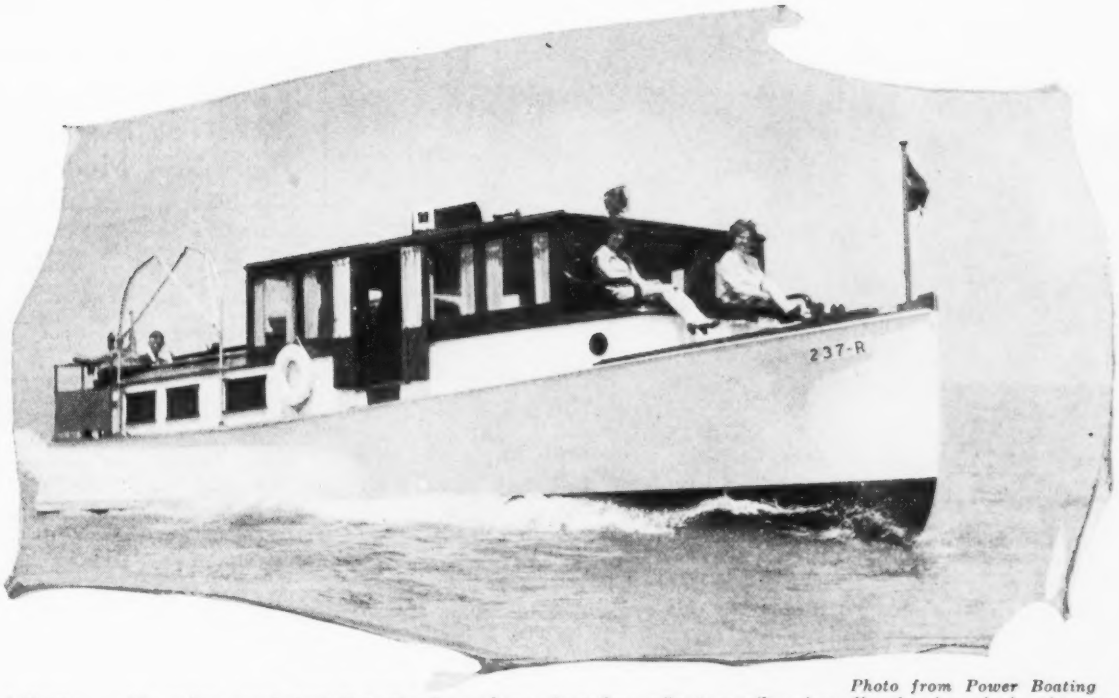


Photo from Power Boating

A Matthews cabin cruiser, speed about 22 to 25 miles an hour, about three miles to a gallon of gasoline, has four single cabins, can carry 15 passengers, costs approximately $8000

Selling the Motor Boat Trade

By Carl A. Foss*

NEW YORK, Nov. 23

PLEASURE boating is rapidly coming to the front and providing oil marketers with an ever growing market for gasoline and motor oils. The strides taken in this market in the last 10 years are shown in government figures of 90,000 small pleasure craft in 1918 as against approximately 225,000 this year.

Small boats with outboard motors now dot lakes and streams with fisherman and pleasure seekers in place of the old rowboat; sleek speed boats skim the waters at many inland summer resorts as the latest in entertainment; cabin cruisers are in much favor for overnight rides or longer trips; and then there is the smallest of all, a wooden sled propelled by an outboard motor capable of making 30 miles an hour. Many of these boat's owners drive automobiles and are well acquainted with the internal combustion engine.

All these boats consume gasoline and oil, some going less than three miles on a gallon and others covering wide territory with this amount of fuel. In addition to the pleasure crafts it is estimated that there are 225,000 larger boats engaged in transport and freight service using gasoline and oil, making a total of around 500,000 crafts looking to the oil man for power and lubrication.

Floating filling stations or those built on docks are used to service this market.

Alexandria Bay, N. Y., is a good example of the bid for the motor boat trade. The town is a small one but is the center of the Thousand Islands colony on the St. Lawrence river. Motor boats are able to buy gasoline and oil at about six riverside service stations and there are about the same number of land stations serving the automobile.

The Standard Oil Company of New York has a combined bulk and retail station. At the end of its dock, there are gasoline pumps for the motor boats, while the company's trucks load at the storage tanks at the land end of the dock. As Alexandria Bay is not on any railroad, the gasoline and oil is transported to the station by water from Albany or Buffalo. A photograph shows the "Socony" which distributes gasoline and oil to other river points.

The floating garage is becoming a popular method of serving the motor boat, especially on the Mississippi and Ohio rivers. The one shown in the photograph is at Alexandria Bay where the owner sells Atlantic Refining Co.'s products. He lives overhead. A storage tank is shown in the center of the lower deck.

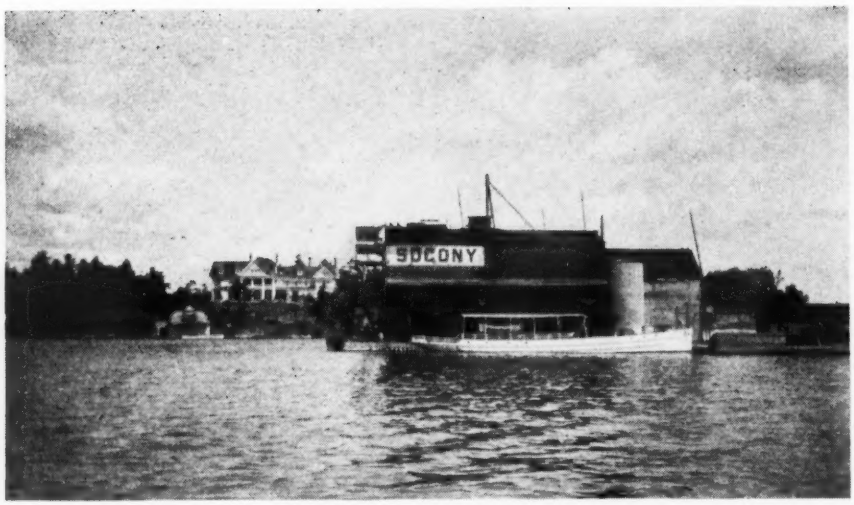
To return to statistics again, there has been an increase in undocumented motor boats from less than 90,000 in 1918 to 224,000 in 1928. There were 35,000 outboard motors sold in 1927. Manufacturers believe they will sell 45,000 this year.

It looks as though the small boat would offer a potential business in the

THIS list shows the number of small pleasure and trade craft in 40 ports of all types in this country as compiled by the U. S. Department of Commerce as of June 30, 1928:

Baltimore	13,558
Boston	12,004
Bridgeport	5,819
Buffalo	1,366
Charleston, S. C.	1,071
Chicago	6,117
Cleveland	4,290
Des Moines	2,802
Detroit	10,831
Duluth	1,056
Galveston	1,819
Great Falls, Mont.	14
Indianapolis	1,160
Los Angeles	2,935
Louisville	2,121
Memphis	3,520
Milwaukee	2,040
Minneapolis	666
Mobile	3,120
New Orleans	11,676
New York	29,932
Norfolk	12,911
Ogdensburg, N. Y.	3,405
Omaha	284
Pembina, N. D.	16
Philadelphia	13,176
Pittsburgh	586
Port Arthur	1,265
Portland, Me.	12,407
Providence	2,833
Rochester	3,045
St. Albans, Vt.	536
St. Louis	5,794
San Antonio	596
San Francisco	4,826
Savannah	1,280
Seattle	6,941
Tampa	18,740
Wilmington, N. C.	6,918

*With The Texas Co.



Standard Oil Co. of New York's marine service station at Alexandria, Bay, N. Y. Retail sales are made at the left. At the right is bulk storage which can be filled from tank trucks. The white motor boat at the dock is the "Socony" which supplies places along the bay with gasoline and oil from railhead at Clayton

near future that no company can overlook. The outboard motor has proved itself a "Henry Ford" in popularizing motor boats for it has enabled the man with free Saturday afternoons and Sundays, with an adjacent puddle of water, to build himself a boat he can keep in the garage, tie on top of the car for the trip to the water, and make 30 miles an hour with the aid of motor equipment that cost less than $250. And they all burn gasoline and use oil.

The requirements for success in obtaining the business of the boat trade seem to rest almost entirely on the location of the station and its accessibility from the water. In the case of the man who wants outboard motor trade, we would recommend adequate parking space for cars and a float from which the boats can be launched. If he has the space, he can add to his income by storing boats and motors.

There does not seem to be any special need for an oil just for the marine trade although the Enterprise Oil Co. puts out a Duplex marine engine oil. The Vacuum Oil Co. has quite a large trade in the marine field but sells its regular grades. This company supplies a chart of its advice as to the proper grade to use in the popular marine engines.

There is no essential difference between the marine engine and the automobile engine except that the former gets harder usage. It should be remembered that the marine engine is always pulling up hill as long as it is running.

In its own territory Standard Oil of New York probably is selling the bulk of the fuel and also probably is selling a goodly share of the lubricating oil. The Texas Co. is getting a good share of the marine trade.

The boat owner is more apt to buy for his boat the same gasoline and oil he will buy for his car providing he can get it. It's up to someone to put a gasoline pump where he can tie his boat.

The accompanying table lists the undocumented boats as compiled by the department of commerce June 30, 1928. It is estimated that there are 150,000 outboard motor boats in this country now. Add in the documented boats with internal combustion engines and the total is around 500,000 boats looking to our industry for gasoline and oil.

Of the 224,798 undocumented boats on June 30, 1928, there were 29.932 in the New York city district, 18,740 at Tampa, 13.558 at Baltimore, and 13,176 at Philadelphia. An undocumented boat is one under 16 tons used for pleasure and under five tons engaged in trade.

RICHMOND, Va., Nov. 24.—Gasoline station operators at Lynchburg, who attempt to open their places on Sunday under an ordinance adopted by the city council recently may run bias to the state law, which has been held on two different occasions not to make a general exception favorable to the sale of gasoline on Sunday.

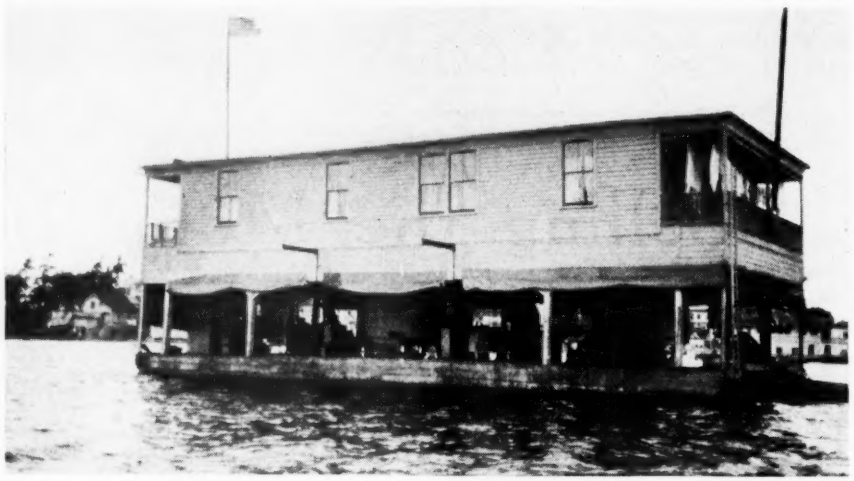
Changes in Oiling, Greasing and Fueling Systems of New Models

Here is a means by which even minor changes in lubrication and fuel systems of new models of automobiles may be quickly made known to the men in your lubrication stations.

John Younger, head of the automotive engineering department of Ohio State university, and editor of Automotive Abstracts, will tell NATIONAL PETROLEUM NEWS readers what the changes are in both engine and chassis lubrication, and in fuel systems, in new models, as they are brought out.

His articles will appear irregularly closely following the announcement of new models by the automobile companies.

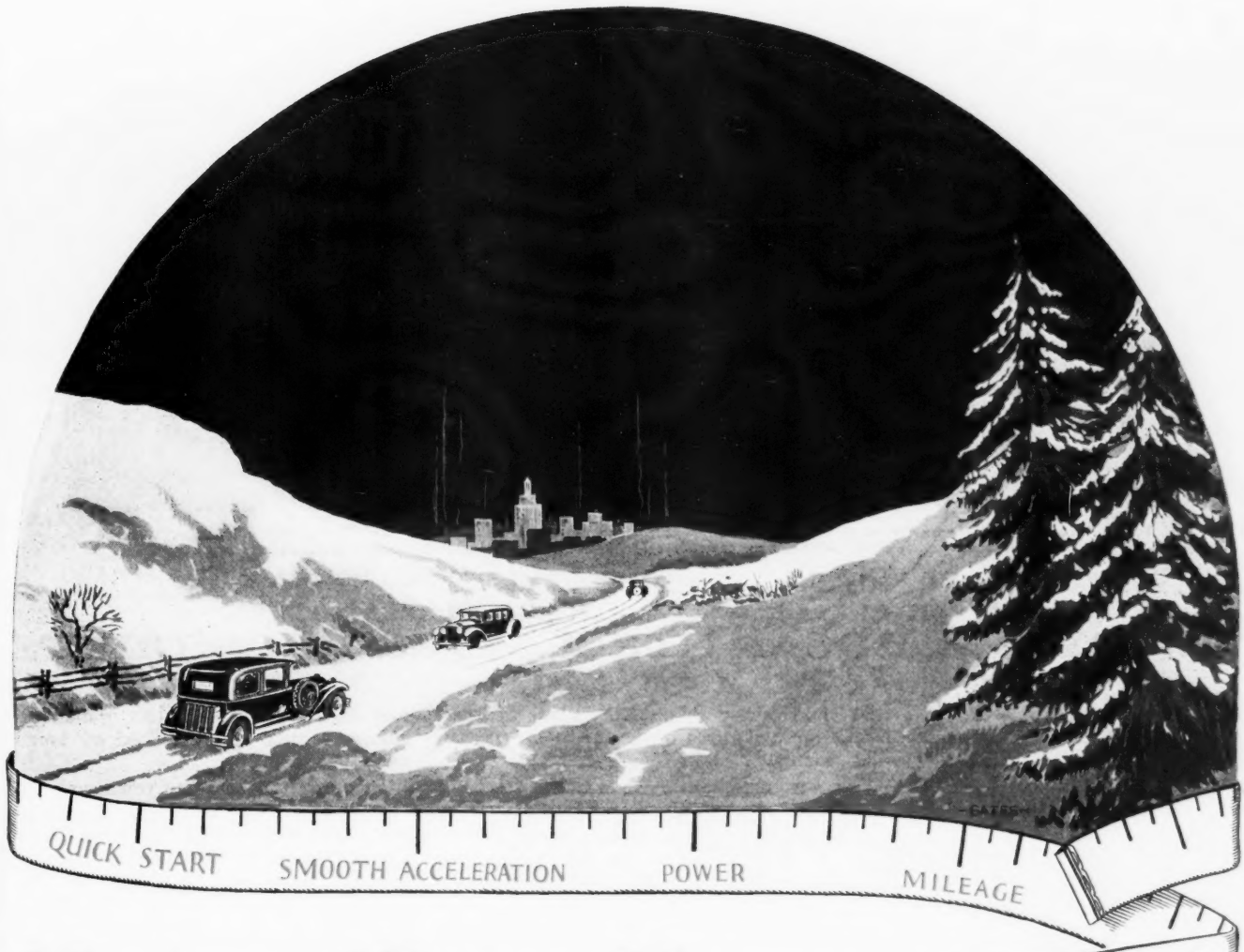
Three new truck models, having capacities of 2½, 3½ and 5 tons respectively, have been added to the



Floating garage at Alexandria Bay, N. Y., for servicing the marine trade. The gasoline storage tank is in the center of the first floor. Fred Knight, the owner, has living quarters above

productions of the International Harvester Co. The 5-ton model is furnished with chain drive only. The engines are Hall-Scott models 151 and 152. Model 151, which is used on the 2½-ton truck has a bore of 4¼ and a stroke of 5½ inches. Model 152, which is used on the 3½ and 5-ton trucks, has a bore of 4¾ inches and a stroke of 5½ inches. Lubrication is by force-feed, the gear-type pump being built into the front of the lower crankcase and driven through a helical gear on the crankshaft. Felt disk, cartridge-type oil filters are standard equipment. The cooling system includes a cast-shell, tubular type radiator and centrifugal water pump, thermostatic control being used.—From Automotive Industries, Nov. 10, page 674.

Dudley M. Steele, manager of Richfield Oil Co.'s aviation department, recently announced that a Stearman biplane is being added to the fleet of planes operated by the company. The new plane is to be especially equipped for cross country flying and for experimental lubrication work.



Made to Winter's Measure

Authorities tell us that gasoline consumption in winter is drawing nearer and nearer to that of summer—that this winter, demand will be very near to that of the past summer—that gasoline is no longer a seasonal product.

Two things have contributed to this;—the closed car, and the expert development of *genuine* winter gasolines that will actually cause a motor in winter to deliver summer performance.

Nothing could be more desirable, from the jobber's standpoint, than to have gasoline and oil taken out of the "seasonal product" class. And the jobber can do nothing more effective in *contributing* to this trend than to handle *exceptionally good* winter gasoline—gasoline that will make the motorist an *enthusiast* on winter driving.

WINTER KING is a scientific, "made to measure", winter gasoline, that we guarantee to you and you in turn can guarantee to your customers as quick-starting, quick-accelerating, powerful, in winter. Yet it sells at so little more than ordinary gasoline that your customers can sell to the consumer at a premium or not, as they prefer. WINTER KING will repay your investigation. Phone, wire or write us, at once.

"CHAMPLIN Oils Have Always Been Good — ALL WAYS"

CHAMPLIN
Winter King
GASOLINE

USE CHAMPLIN OILS

CHAMPLIN REFINING COMPANY ~ *Enid, Okla.*

Two bear cubs furnish amusement to motorists and profit to the owners of the B. & J. Oil Co. at Belleville, Kan. Several new customers and an increase in gasoline sales have resulted from this attraction, the owners say

Cunning Cubs Attract 'Gas' Customers

SALINA, Kan., Nov. 24

OIL company advertising, since its beginning directed mostly at men, found a new "market" when woman took the wheel and began buying gasoline and motor oil. Now comes an oil marketer who takes a step further and makes his appeal to children.

Quick pick-up, volatility, carbon deposits and other such technical discussions have no place in his advertising most of the time. Two amiable, woolly black bears are the attraction, not only to the children, but to their parents as well.

These bear cubs, about six months old now, are stationed in a cage in front of the main service station of the B. & J. Oil Co., Belleville, Kan. A rustic cave of rough-hewn logs is their home and that is fenced in. Within a few days after the cubs had been brought to the station, their fame had spread for many miles about, and children were making it uncomfortable for their parents until they took them over to see the bears. These animals are especially popular in this town as there is no zoo within 200 miles of Belleville.

Not only is the public interested in these cubs, but they help to increase gasoline gallonage. Although they have been there only for a little over two months, the company has traced several new customers and an increase in gasoline sales as a direct result of the bears.

One instance proving the power of the cubs as an attraction for trade is illustrated in the fact that on the third Sunday when they were on display, three different families in as many cars, drove to the station from Phillipsburg, 95 miles away, expressly to see the bears. Before they started home, they bought 28 gallons of gasoline and three quarts of motor oil, the company claims.

A merchant who runs a store a block from the B. & J. station, remarked: "The children will hardly let their parents shop in peace in their anxiety to get down the street to see the bears."

"The cubs have given the children so much pleasure," A. B. "Bud" Huntington, one of the owners of the company says, "that the parents seem to feel we have earned their business by providing them. And don't think," he adds, "that the older folks do not get a 'kick' out of watching the little fellows, too."

Mr. Huntington and his partner, J. H. "Joe" Urban, estimate that four cars out of every seven that pass the station stop to look at the bears, and possibly every car having children in them, will stop.

The cubs were brought back by Mr. Urban on his return trip from Canada this summer. He found them through a trapper, "75 miles from nowhere," as he says, in northern Minnesota. He put them into a cage mounted on the front bumper of his car and thus transported them. They have been named Bobbie and Jessie, hooking up the initials of those names with the B. & J. of the company name.

"They are adept at learning tricks," R. L. Harper, of the Pennsylvania Petroleum Co., North Kansas City, says. "Nearly everyone who stops to admire them wants to feed them and the station sells Cracker Jack and especially prepared pop so that the bears may be indulged.

"While Bobbie and Jessie prefer to eat and drink sweets, visitors bring peanuts and a variety of other edibles. They are fed a regular diet of bread and milk. They get one gallon of skimmed milk and one loaf of bread each per day."

Bringing the bears to town was not the first time "Bud" and "Joe," as the owners are generally known to customers, had appealed for business through the children of the community. A recent trade day, sponsored by the Belleville trade day committee for the purpose of bringing large crowds to town, had an air meet as its feature.

" 'Bud' and 'Joe'," Mr. Harper continued, "prepared for the day by buying white muslin skull caps, imprinted with their firm name in box-car letters to give the kiddies. Over 1000 of these caps were distributed and worn during the day by the boys and girls who were making a holiday. Probably most of them saw service for weeks thereafter. Incidentally, the boys who received caps were required to register their names and addresses in a book provided for the purpose. At Christmas time these boys, some 500 of them, will receive a card or small remembrance from the firm. It is obvious that not only the boys but their parents as well, will appreciate this thoughtfulness on the part of the B. & J. Oil Co."

The business has been built on personality, sound merchandising, and novel advertising, according to Mr. Harper. Personal attention on the part of the owners, one of whom always manages to be at the main station, is a great factor in building up their trade.

Accurate information on road conditions and solving the farmer's lubrication problems, are among the things the company offers to its customers.

"The owners are 'Bud' and 'Joe' to everyone with whom they come in

YOUR Christmas Greetings with a good book—is a thoughtful way of remembering your friends and associates at Christmas time.

We will enclose a Christmas card signed with your name. All you have to do is to send in the coupon.

If you don't find the book you wish below, write us at once. We have a complete list of the best books on the petroleum industry.

Send your order in at once to avoid the usual Holiday jam in the mails.

ACCOUNTING for the PETROLEUM INDUSTRY

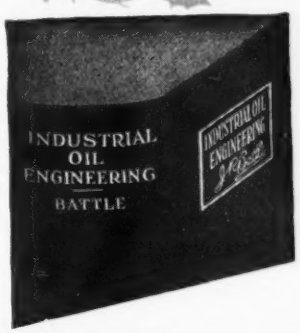
"Accounting for the Petroleum Industry" by D. F. Morland and R. W. McKee, is one of the most practical and comprehensive works on accounting principles and procedure for all branches of the oil industry—production, transportation and storage, refining, marketing.

Accounting for each branch is discussed separately; description of technical practices is given, and the accounting problem to be solved in each activity is set forth together with sample forms in use; tables for depreciation rates, etc.

For refinery accounting this book recommends the "weighted selling ratio method" which is described in detail and which has the advantage of determining for every product a cost which will allow for a reasonable profit when disposition is made thereof.

"Accounting for the Petroleum Industry" is carefully prepared and the most practical book written on the subject of accounting for the oil business.

304 pages—Price $4



THIS is the third revised edition of INDUSTRIAL OIL ENGINEERING by J. R. Battle. The author is a well known mechanical engineer who has studied the lubrication needs of all types of machinery.

The book contains 1,100 pages of tables, charts, requirements and other information on lubrication and industrial oils. Tells you the most efficient utilization of oil products and equipment; the saving of power and elimination of oil waste.

INDUSTRIAL OIL ENGINEERING is the most complete work written on lubrication. It is valuable to every oil man interested in lubricating oils and their use. Price $10.

Gasoline

What Everybody Should Know About It

The complete story of "Gasoline" told in popular language, and written by an authority on the subject of its use in motor cars—T. A. Boyd, head of Fuel Section, General Motor Research Corp.

What gasoline is, where it comes from, its properties, what distinguishes good gasoline from bad, how the motorist can get more miles out of a gallon, and help in the economy of this important fuel—all these facts are given in chatty, non-technical style.

"Gasoline" is a message to the public that has so often been recommended to the oil industry. Every man engaged in the making and distributing of motor fuel should read it.

206 pages—popularly priced at $2.50.

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NATIONAL PETROLEUM NEWS
Room 708, 1213 West 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____
(Add 15c for foreign postage)

- ☐ Accounting for the Petroleum Industry—$4
- ☐ Industrial Oil Engineering—$10
- ☐ Gasoline—$2.50

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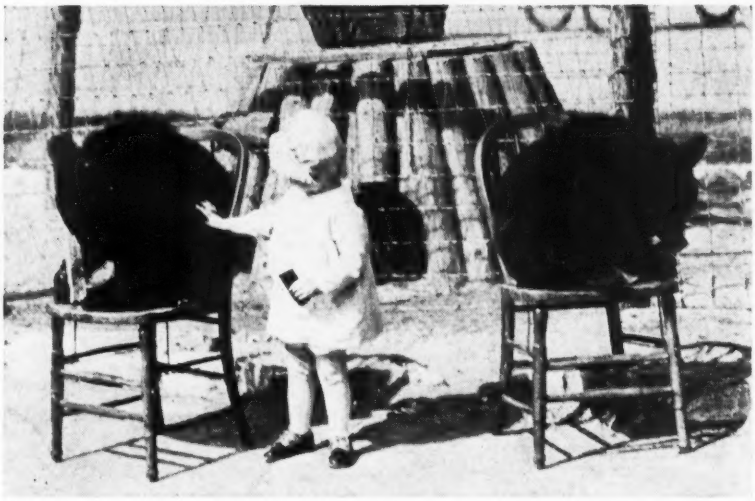


Only one of the many little girls who begs mamma and daddy to take her to see the real live teddy bears at the station of the B. & J. Oil Co. Daddy usually gets his gasoline tank filled while daughter feeds chocolate bars to the cubs

contact," Mr. Harper says, "and they have been successful in carrying the personal service idea all the way through their organization. Picture slide advertising in the local theatres announces that 'Bob', 'Hack' and 'Mac', their truck delivery salesmen, are eager to give the farmers prompt and efficient service.

"'Bud' and 'Joe' are the most congenial of partners. One or both are always on the job at the service station, giving individual attention and a pleasant word to as many customers as possible, and seeing that their station salesmen overlook nothing in rendering real service.

"They keep posted on highway conditions and the tourist can secure reliable information regarding the roads for hundreds of miles in any direction without delay. They keep equally well informed on the products they sell and their advice on questions of proper lubrication of farm machinery as well as automotive equipment is usually accepted without question by their local customers."

The station is advantageously located, being in the central part of town on U. S. highway 36, one block from the intersection of that highway and U. S. highway 81. It is the nearest station to the intersection, which is advertised as the "Crossroads of America."

The company started in business less than six years ago, with one service station, now the main one, and two bulk storage tanks. Today the company owns a bulk station, a warehouse, and four service stations.

The company operates only the one station, and leases the other three service stations to individuals.

In spite of the opening of three service stations by large oil companies during the preceding 60 days in Belleville, August of this year was the largest month in point of gallonage the B. & J. company has had since it opened.

A modern storage garage adjoins the main service station which houses the wash racks and greasing pits. These are in charge of "Lee."

The company is an active member of the Kansas Oil Men's Association and the Independent Oil Men of America, displaying its Independent Oil Men insignia conspicuously at its station.

Pictures Speak Louder Than Words

CLEVELAND, Nov. 23.—A small model of an oil field showing various oil formations, was the center of attraction at the exhibit of the Standard Oil Co. of California during the recent Pacific Southwest Exposition at Long Beach, Cal. This exhibit, which was almost entirely in pictures, illustrated to the many visitors at the fair, some of the various phases of the oil business.

Pictures were hung on the outside walls of the exhibit booth, one column of pictures being devoted to each phase of the business. One of these columns of pictures showed how oil is delivered, another one how it is used in transportation, aviation, etc. Another column attempted to show something of the refining of oil and laboratory processes through which crude oil must pass before it can become a finished product. How it is drilled and obtained from the ground was indicated in another group of pictures.

Cans containing various grades of gasoline and lubricating oils surrounded the low platform of the booth. At the back of the exhibit was a large sign, endeavoring to show the wide use of that company's gasoline in aviation and by famous fliers.

Live Program, Prizes Drew Marketers To I.O.M.A. Convention

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Nov. 23

CONTESTS of various sorts contributed to enliven the Marketing Congress of the Independent Oil Men of America at the Stevens hotel, Chicago, Nov. 19 to 21 inclusive; but none created more interest than the five-minute oratorical contest, inaugurated by E. H. Hilpp, Kentucky Consumers Oil Co. of Louisville, and managed by Paul U. Deer of G. W. Deer & Son Corp., Crawfordsville, Ind.

Colonel Hilpp is president of the I.O.M.A. and Mr. Deer is secretary. They put a great deal of thought and enthusiasm in the idea. Colonel Hilpp donated the handsome bronze trophy and Mr. Deer wrote the rules of the contest. In brief, the contest was open to members of I.O.M.A. who must talk about profitable oil marketing for not more than five minutes. The judges picked the winner on delivery and subject matter.

W. Howard Holcombe, Pennsylvania Petroleum Products Co., Providence, R. I., won the contest and one year's possession of the Hilpp trophy. His talk was about selling oil burners and fuel for them. Karl A. Buck, Tri-Star Oil Co., Calmar, Ia., won honorable mention in the contest. He told about his four reasons for belonging to I.O.M.A.

Three other contestants in the running were Stanley W. Rusk, Rusk Oil Co., Philadelphia, Penna.; R. R. Matthews, Battenfeld Grease & Oil Co., Kansas City, Mo., and A. D. Dubuisson, Wolverine Service Stations, Inc., South Haven, Mich.

The advertising contest was a close second in interest. Two sides of the assembly hall were lined with panels, about 4 by 6 feet, covered with velvet and lighted for appropriate display. Each contestant was given one panel in which to show the advertising material used in pushing his products the past year.

The judges selected the winner of the contest on a basis of the character of the advertising and the attractiveness of the panel. Newspaper advertising, direct mail advertising, novelty advertising and means of stimulating word-of-mouth advertising were all admissible. About 50 I.O.M.A. members took part in the contest.

It was won by J. M. Wolf of Southern Minnesota Oil Co., Fairmont, Minn., who passed along a lion's share of the glory to A. M. Clark, his advertising manager. Fred E. Bergfors, Quincy Oil Co., Quincy Adams, Mass., was second and won honorable mention. The prize was a silver cup.

The grand prize drawing was participated in mostly by women. About 30 oil men brought their wives to Chicago and the ladies were not so much interested in the business sessions as in the chance of winning a prize. While their husbands listened to addresses and took part in discussions, they visited exhibit booths and registered.

Several of the prizes in the big lottery were household items and the women worked hard to win. They met every condition of the contest. They registered. They visited every booth and signed cards to increase their number of chances. Consequently the men did not have a look-in when the big drawing took place the last day.

THE grand prize, a 100-piece set of Haviland china, was won by Mrs. E. B. Morgan, of Wyaconda, Mo., wife of the head of the Morgan Oil Co. The prizes in this contest that were intended for men were traded back, for the most part, to May & Malone who supplied them, and their value applied on "feminine gewgaws," better to suit the taste of the winners.

Several of the exhibitors at the meeting conducted little private drawing contests in their booths. Women did not get in on these so extensively. R. G. Cunningham, who heads the Cunningham Oil Co., Miami, Okla., won a storage tank from the Graver Corp., East Chicago, Ind., and G. D. Givens, head of the Home Oil Co., Henderson, Ky., won a truck tank from the Columbian Steel Tank Co., Kansas City.

Harry L. Robinson, of Calumet Refining Co., won a handsome leather bag. He being a traveling salesman this probably rings the bell as the most appropriate application of the prize contest. There were 35 or 40 prizes on the list and a complete record of the winners could not be had at I.O.M.A. offices the second day after the meeting. It will probably take considerable time to check all numbers and clear the record entirely.

The equipment show consisted of 42 exhibits. Unlike all previous conventions in the oil business, the exhibition was held on the fifth floor of the Stevens hotel and each exhibitor had a room. Ushers were posted along the halls to help people find whatever exhibit they might be hunting and a complete index of the floor was painted on a sign board near the elevators.

The group luncheon system adopted at this meeting was commented upon favorably. Instead of attempting to let every man at the convention eat lunch in one room, several small dining rooms were made ready and groups sent to them.

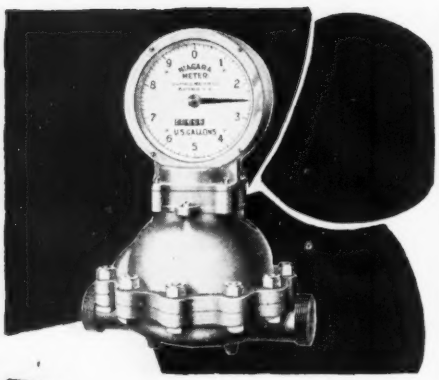
Oil men were grouped by territories. New England jobbers lunched in one of the larger rooms and another was occupied by oil men from Kentucky, Virginia and points south. There was also a group of executives of state associations; a group of lubricating oil salesmen, and a group of exhibitors.

The next day the lunches were divided along other lines. Seven speakers were each assigned a dining room. Their names and the subjects of their talks were announced. Those attending went to the dining room whose speaker interested them most. The big meeting that day was addressed by G. P. Shillinger, of La Salle Extension University, whose subject was "Service Station Salesmanship."

MR. SHILLINGER told the oil men about the correspondence course which his school had developed with and for the Wadhams Oil Co. of Milwaukee and what it had accomplished in the way of helping that company get good men and keep them. La Salle Extension has developed several such courses since. It is just now completing a course similar in size to the Wadhams course for Champlin Refining Co. The Champlin course is for the company's dealers and not for employes.

More than 500 men registered at the meeting. For the first time in several years a national convention had enough attendance from a great distance to pass the 250 mark and validate enough railroad transportation certificates to secure half-fare rates home for all who came by train.

The business meetings were well at-



A Niagara Meter pays its way!

The gallons of gasoline or oil you give away through overmeasure or lose through forgetfulness or theft in a year's time will pay for a Niagara Meter. A size and type for every requirement.

Send for Niagara Meter Catalog "N.P.2" which gives all the facts. No cost or obligation of any kind.

Buffalo Meter Company
2889 Main St.,
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Niagara Oil Meters
"The Constant Guardians of Liquid Profits"

Selling "Good Will"

"Good Will" is an intangible but very real asset.

But—only that portion of the "Good Will" that can be actually transferred to new owners can be considered of value to them.

To arrive at the value and present it in its most substantial and attractive form constitutes a problem requiring careful investigation and analysis.

The physical properties alone have no value beyond actual replacement cost—plus the element of time involved in acquisition, construction, and coordination.

Profitable and satisfactory selling or buying of a business requires that negotiations be confidential and the sale so made that both parties to the transaction profit by it.

Booklet "Financing and Liquidating" mailed on request

L. V. NICHOLAS
Oil Finance — Organization — Investment
624 South Michigan Avenue
Chicago, Illinois

tended. By a previous arrangement the exhibitors closed the doors of their rooms during the business conferences. That stimulated full and prompt attendance at business sessions. Early attendance prizes also seemed to improve promptness.

Paul Hadlick, secretary of the Minnesota Petroleum association and C. L. Maguire, of Northland Oil Co., both of Minneapolis, presented a proposition to the meeting to hold a marketing congress every fall and ask the secretaries of state associations to cooperate. Those in attendance voted in favor of it. The matter rests upon the approval of the several state groups.

The convention fever was contagious. L. D. Pierce, of Pennsylvania Petroleum Products Co., Providence, R. I., at the New England luncheon, promoted $4000 with which to stage a similar meeting in Boston in March. It will be a New England meeting of I.O.M.A. members. The New Englanders immediately employed Marion McQueen, special convention secretary of I.O.M.A. to come to Boston and help organize the meeting.

At the luncheon of delegates from the southern states, it was arranged to hold a regional I.O.M.A. convention in Memphis in January or February. The two sets of plans were launched without any collaboration in advance.

Future Markets From Flying Are Shown Oil Men

CHICAGO, Nov. 26

"FLYING to Europe alone in an airplane or with one or two passengers is not to be discounted as a great achievement, but there is no serious economic need for such trips. What America needs is a route to Europe by which a flying machine may carry a pay load," Bert Hassell told the Independent Oil Men of America in convention at the Stevens Hotel, Chicago, this week.

The speaker was the same Mr. Hassell who, with Parker Cramer made an unsuccessful attempt to fly from Rockford, Ill., to Stockholm, Sweden, last summer. The failure of the flight was not due to any defect in their original idea to fly to Europe mostly over land, Mr. Hassell said, adding, "We are going to try it again next summer."

"Flying to Europe directly across the Atlantic is the shortest route" he said, "but it is over water most of the way. There being no place to land, the flyer must start with enough gasoline to take him all the way. Such a load of gasoline precludes the possibility of a plane's carrying much of anything else. So the due east route is not the pay route.

"When Cramer and I started we meant to blaze the trail for a commercial air line to Europe. The plan was to make an 800-mile hop to Cochran, Canada, then 1970 miles to Mt. Evans, Greenland, then 800 miles to Rekjavik, Iceland, and then a 1300-mile hop to Stockholm. Two other intermediate stops could be added to that list."

Mr. Hassell was introduced to the I.O.M.A. by Omer S. Smith, Smith Oil & Refining Co., Rockford, whose company is one of the pioneer Independents of Illinois. There were two other speakers on that portion of the program devoted to aviation. Thomas Wolfe, district manager of National Air Transport, Inc., discussed the relation of aviation to the petroleum industry.

"Of the 53 attempted flights across oceans, 25 have been successful," said Mr. Wolfe. "Commercial flyers in America are doing in excess of 25,000 miles a day. They are flying 300,000 miles per forced landing with motors built during the World war. Potential speeds have only been hinted at. There is no reason to believe we may not be able to fly from Chicago to New York in two hours.

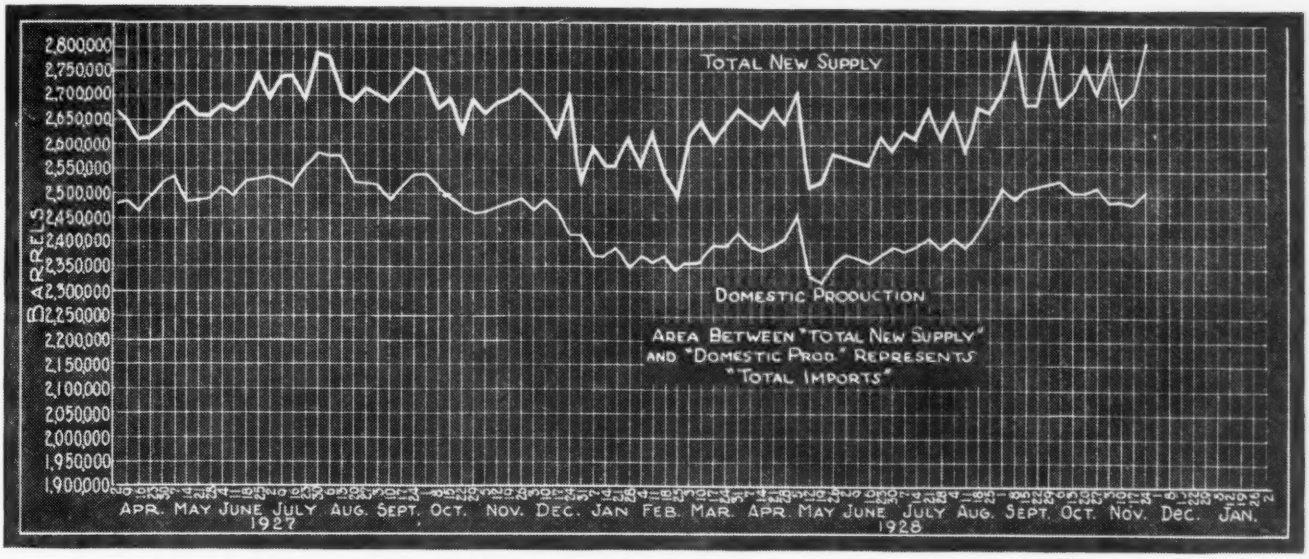
"For 1929, 10 million miles of flying are scheduled. Manufacturers of airplanes are far behind with orders."

Just how much the oil industry may be interested in the new customer, aviation, was told by E. F. Hallock of Vacuum Oil Co., manager of the manufacturers' service division. Mr. Hallock related that 2000 planes were built in 1927; in 1928 the number built exceeded 8000 planes, and in 1929 it is expected that 16,000 will be made. And they are being sold faster than manufacturers can turn them out.

"The average airplane motor consumes 12 to 14 gallons of gasoline and a quart of motor oil per flying hour," said Mr. Hallock. "For the big three motored planes that figure can be multiplied by three to show what the plane consumes. Moreover, most airplanes carry an auxiliary 5-gallon supply of motor oil in their lubrication system which is drained every 20 hours, whether it seems to need renewing or not."

HOUSTON—The Cooper Petroleum Co., marketers, have moved their offices from the West building to 1401 Esperson building, Houston. The firm is composed of B. P. Cooper and H. R. Kellar.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Nov. 24	Nov. 17
Production east of Rockies	1,839,200	1,847,350
Decrease		8,150
Total production in U. S.	2,505,000	2,490,850
Increase		14,150
Crude oil imports	301,714	218,286
Increase		83,428
Total crude supply	2,806,714	2,709,136
Increase		97,578

OKLAHOMA

	Nov. 24	Nov. 17
North Braman	2,700	2,750
South Braman	1,350	1,300
Blackwell	3,050	3,100
Hubbard	2,350	2,350
Thomas	1,100	1,050
Tonkawa	11,800	11,800
Garber	7,100	7,200
Burbank	25,650	25,500
Osage, outside Burbank	26,000	26,050
Cushing	20,050	20,150
Yale Jennings	7,600	7,550
Davenport	1,700	1,700
Bristow-Slick	20,200	20,500
North Okmulgee	14,400	14,450
Pearson	2,050	2,100
Lyons-Deaner	4,300	4,500
St. Louis	130,050	126,800
Allen Dome	24,100	23,000
Cromwell	8,450	8,850
Papoose	4,000	4,000
Wewoka	5,400	5,400
Seminole	41,750	42,950
Bowlegs	50,650	50,200
Searight	10,250	10,800
Little River	105,450	110,200
Earlsboro	75,850	77,550
Duncan district	7,750	7,750
Graham	4,750	4,750
Fox	1,600	1,600
Healdton	13,650	13,650
Hewitt	9,000	9,000
Scholem Alechem	14,400	14,450
Others	54,450	52,100
Total Oklahoma	712,950	715,100
Decrease		2,150

KANSAS

Greenwood County	25,600	25,500
Florence-Covert	1,000	700
Peabody-Elbing	3,250	3,250
Eldorado-Towanda	12,900	12,900
Augusta-Fox-Bush	3,200	3,250
Rainbow Bend	1,300	1,400
Russell	4,000	4,050
Churchill	8,100	8,200
Oxford	7,550	7,550
Others	29,400	29,200
Total, Kansas	96,300	96,000
Increase		300

NORTH LOUISIANA

Homer	4,100	4,100
Haynesville	5,800	5,806
Caddo, light	9,150	9,500
Caddo, heavy	3,000	2,950
De Soto, Red River	4,050	4,100
Elm Grove	600	600
Bellevue	900	900
Cotton Valley	3,900	4,050
Urania	6,200	6,200
Pleasant Hill	500	550
Total, North Louisiana	38,200	38,750
Decrease		550

ARKANSAS

El Dorado	4,950	5,000
Champagnolle	13,050	12,950
Smackover, light	7,150	7,200
Smackover, heavy	53,750	54,050
Stephens	1,000	1,000
Nevada	1,350	1,400
Lisbon	1,700	1,700
Others	100	100
Total, Arkansas	83,050	83,400
Decrease		350

TEXAS (Outside Gulf Coast)

Panhandle District

	Nov. 24	Nov. 17
Hutchinson County	28,900	30,300
Carson County	6,100	6,100
Gray County	25,500	26,850
Wheeler County	800	800
Others	2,900	2,700
Total, Panhandle District	64,200	66,750
Decrease		2,550

North Texas

Burkburnett	9,850	9,700
Electra	12,750	12,650
Iowa Park and K-M-A	3,800	3,700
Wilbarger	32,800	33,000
Archer County	19,400	19,300
Montague-Cooke	10,200	10,000
Others	600	600
Total, North Texas	89,400	88,950
Increase		450

West Central Texas

Stephens County	7,650	7,500
Eastland-Desdemona	7,000	7,150
Brown County	10,300	10,400
Coleman County	3,950	3,850
Callahan County	3,700	3,600
Shackleford County	10,450	10,400
Young County	8,650	8,600
Throckmorton County	800	800
Palo Pinto County	350	350
Jack County	1,300	1,400
Others	700	700
Total, West Central Texas	54,850	54,750
Increase		100

West Texas

Jones County	3,450	3,550
Mitchell and Scurry Counties	2,700	2,700
Howard County	31,050	30,050
Reagan County	17,200	17,300
Crane and Upton Counties	53,900	52,100
Crockett County	2,850	3,000
Pecos County	67,900	71,400
Winkler County	149,150	148,700
Others	1,400	1,400
Total, West Texas	329,600	330,200
Decrease		600

East Central Texas

Mexia	6,400	6,500
Currie	550	550
Richland	500	500
Wortham	1,500	1,550
Corsicana-Powell	9,600	9,650
Boggy Creek	1,900	2,000
Nigger Creek	700	700
Total, East Central Texas	21,150	21,450
Decrease		300

Southwest Texas

Luling	13,450	13,400
Lytton Springs	1,150	1,100
Somerset	700	700
Laredo District	8,850	8,900
Dale	850	850
Others	2,750	1,650
Total, Southwest Texas	27,750	26,600
Increase		1,150
Total, Texas (Outside Gulf Coast)	586,950	588,700
Decrease		1,750

GULF COAST

Coastal Texas

West Columbia	8,500	7,750
Damon Mound	1,250	1,650
Big Creek	2,050	2,550
Boling	2,950	1,900
Blue Ridge	6,200	6,750
Pierce Junction	9,750	9,900
Humble	3,800	3,850
Goose Creek	6,600	6,900
South Liberty	5,800	4,750
Hull	11,000	11,700
Saratoga	950	1,000
Batson	1,300	1,350
Barber's Hill	1,000	1,500
Sour Lake	3,200	3,000
Spindletop	37,500	38,200
Orange County	3,550	3,700
Sugarland	4,850	4,500
Others	3,150	2,450
Total, Coastal Texas	113,400	113,400

Coastal Louisiana

Vinton	4,200	4,400
Sulphur Dome	2,000	2,100
Lockport	4,200	4,400
Sweet Lake	1,500	1,900
Evangeline	900	1,000
East Hackberry	5,400	4,100
Edgerly	800	800
Sorrento Dome	550	500
Others	1,600	1,900
Total, Coastal Louisiana	21,150	21,100
Increase		50
Total, Gulf Coast	134,550	134,500
Increase		50

ROCKY MOUNTAIN

Wyoming

Salt Creek	35,350	36,250
Grass Creek	2,300	2,400
Elk Basin	1,000	900
Big Muddy	2,600	2,700
Lost Soldier	3,650	3,700
Rock Creek	2,500	2,600
Lance Creek	350	350
Oregon Basin	4,350	4,350
Others	6,000	6,300
Total, Wyoming	58,100	59,550
Decrease		1,450

Montana

Cat Creek	1,500	1,550
Sunburst	7,950	8,300
Pondera	2,000	2,000
Others	100	350
Total, Montana	11,550	12,200
Decrease		650

Colorado

Moffat (Craig)	1,250	1,300
Fort Collins	2,300	2,550
Florence	1,200	1,300
Others	2,350	2,550
Total, Colorado	7,100	7,700
Decrease		600

New Mexico

Table Mesa	250	
Hogback	500	500
Artesia	1,050	1,050
Rattlesnake	900	700
Others	250	200
Total, New Mexico	2,950	2,450
Increase		500
Total, Rocky Mountain	79,700	81,900
Decrease		2,200

CALIFORNIA

Santa Fe Springs	66,000	50,000
Long Beach	192,500	187,500
Huntington Beach	51,500	51,500
Torrance	16,000	16,000
Dominguez	10,000	10,000
Rosecrans	5,500	5,000
Inglewood	28,000	28,000
Midway-Sunset	75,000	75,000
Ventura Avenue	52,000	51,500
Seal Beach	26,000	25,500
Others	143,300	143,500
Total, California	665,800	643,500
Increase		22,300

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa. and N. Y.)	107,500	109,000
Decrease		1,500

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended November 23 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Nov. 23	Total Week Ended Oct. 26
Plants Reporting	12	29	28	12	81	82
Da. Av. Cap. (bbls.)	92,000	160,200	125,100	54,900	432,200	437,200
Da. Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	50,173 — 15.2	108,084 + 0.2	79,896 — 6.7	58,764 — 5.9	296,917 — 5.8	320,290
Da. Av. Other Oils	5,265 — 33.1	7,167 +155.7	4,410 + 15.0	2,877 + 68.6	19,719 + 12.3	27,260
GASOLINE—Gallons						
Stocks, Nov. 16	10,493,000	30,895,000	20,784,000	6,560,000	68,732,000	55,673,000
Prod. 11-16 to 11-23	8,031,000 — 8.6	18,872,000 + 3.8	9,338,000 — 7.0	5,796,000 — 1.0	42,037,000 — 1.9	45,206,000
Ship. 11-16 to 11-23	7,981,000 — 3.7	15,060,000 — 7.0	8,491,000 + 1.4	5,977,000 + 20.9	37,509,000 — 0.8	43,601,000
Stocks, Nov. 23	10,543,000 + 0.5	34,707,000 + 12.3	21,631,000 + 4.1	6,379,000 — 2.8	73,260,000 + 6.6	57,278,000
Ratio Sales to Prod	99.4%	79.8%	90.9%	103.1%	89.2%	96.4%
KEROSENE—Gallons						
Stocks, Nov. 16	8,212,000	5,148,000	1,922,000	419,000	15,701,000	14,174,000
Prod. 11-16 to 11-23	1,451,000 — 26.3	2,527,000 + 11.0	1,725,000 — 0.4	280,000 + 0.4	5,983,000 — 4.4	5,871,000
Ship. 11-16 to 11-23	1,588,000 — 34.1	2,209,000 + 6.2	1,142,000 — 40.7	275,000 — 27.2	5,214,000 — 23.2	5,737,000
Stocks, Nov. 23	8,075,000 — 1.7	5,466,000 + 6.2	1,505,000 + 30.3	424,000 + 1.2	16,470,000 + 4.9	14,308,000
Ratio Sales to Prod	109.4%	87.4%	66.2%	98.2%	87.1%	97.7%
STOVE DISTILLATE—Gallons						
Stocks, Nov. 16	2,017,000	3,844,000	423,000	83,000	6,367,000	6,501,000
Prod. 11-16 to 11-23	139,000 — 16.2	638,000 — 10.3	253,000 + 24.6	132,000 + 63.0	1,162,000 — 0.3	1,429,000
Ship. 11-16 to 11-23	164,000 +178.0	675,000 — 24.1	213,000 — 1.4	177,000 +113.3	1,229,000 — 1.4	1,101,000
Stocks, Nov. 23	1,992,000 — 1.2	3,807,000 — 1.0	463,000 + 9.5	38,000 — 54.2	6,300,000 — 1.1	6,838,000
Ratio Sales to Prod	118.0%	105.8%	84.2%	134.1%	105.8%	77.0%
GAS OIL—Gallons						
Stocks, Nov. 16	5,886,000	33,267,000	12,638,000	6,336,000	58,127,000	59,415,000
Prod. 11-16 to 11-23	1,875,000 + 22.0	1,266,000 — 19.1	1,496,000 — 49.3	2,196,000 — 10.6	6,833,000 — 19.7	6,872,000
Ship. 11-16 to 11-23	1,917,000 — 6.5	1,921,000 + 14.1	1,784,000 +237.9	2,413,000 + 0.2	8,035,000 + 20.4	6,140,000
Stocks, Nov. 23	5,844,000 — 0.7	32,612,000 — 2.0	12,350,000 — 2.3	6,119,000 — 3.4	56,925,000 — 2.1	60,147,000
Ratio Sales to Prod	102.2%	151.7%	119.3%	109.9%	117.6%	89.3%
FUEL OIL—Gallons						
Stocks, Nov. 16	29,896,000	58,425,000	72,386,000	22,551,000	183,258,000	179,591,000
Prod. 11-16 to 11-23	5,426,000 — 14.3	7,442,000 + 7.1	10,651,000 + 1.8	7,870,000 + 11.3	31,389,000 + 1.9	36,818,000
Ship. 11-16 to 11-23	7,146,000 — 4.9	9,502,000 + 6.9	12,202,000 + 9.0	7,665,000 — 16.1	36,515,000 — 0.6	33,223,000
Stocks, Nov. 23	28,176,000 — 5.8	56,365,000 — 3.5	70,835,000 — 2.1	22,756,000 + 0.9	178,132,000 — 2.8	183,186,000
Ratio Sales to Prod	131.7%	127.7%	114.6%	97.4%	116.3%	90.2%

Gasoline Produced by Various Methods, Week Ended November 23

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,284,000	65.8	11,336,000	60.1	7,431,000	79.6	2,299,000	39.7	26,350,000	62.7
Cracked	2,188,000	27.2	6,486,000	34.4	1,525,000	16.3	2,927,000	50.5	13,126,000	31.2
Natural	559,000	7.0	1,050,000	5.5	382,000	4.1	570,000	9.8	2,561,000	6.1
Total	8,031,000		18,872,000		9,338,000		5,796,000		42,037,000	

+ or — columns are % change from previous week.

Large Reduction Reported in Fuel Oil Stocks

Staff Special—By Telegraph
TULSA, Nov. 27

STOCKS of fuel oil at 81 Mid-Continent refineries were reduced more than 5,000,000 gallons the week ended Nov. 23, according to reports to NATIONAL PETROLEUM NEWS.

It was the second week in succession that demand for heavy oils has been well above the level of production. Total stocks of reporting refiners Nov. 16 were 178,132,000 gallons, a reduction of 11,000,000 gallons since stocks reached a peak of 189,173,000 gallons Nov. 9.

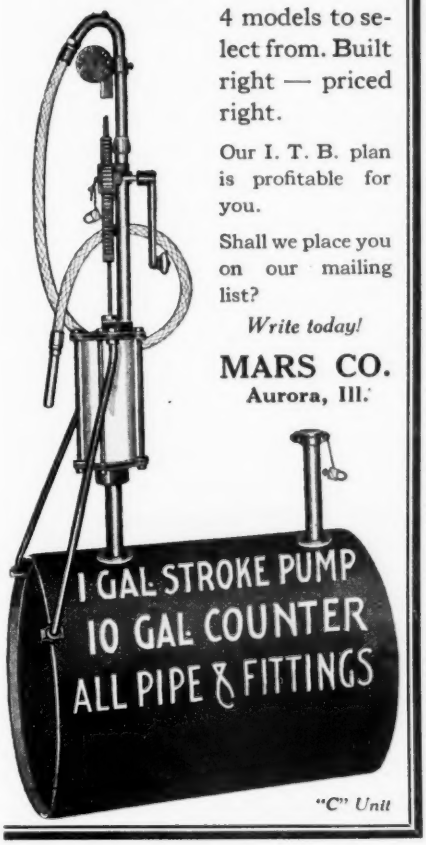
In north Louisiana and Arkansas fuel oil shipments were slightly below the week's level of production but in all other areas substantial cuts were made in stocks. Kansas refiners drew 1,720,000 gallons of fuel oil from their tanks, reducing their stocks to 28,176,000 gallons. Okla-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 23. Change in stocks figured from Oct. 26.

	Gallons
GASOLINE	
Production	170,888,000
Shipments	154,906,000
Net change in stocks	+15,982,000
Ratio sales to production	90.6%
KEROSENE	
Production	24,852,000
Shipments	22,690,000
Net change in stocks	+2,162,000
Ratio sales to production	91.3%
STOVE DISTILLATE	
Production	4,830,000
Shipments	5,368,000
Net change in stocks	—538,000
Ratio sales to production	111.1%
GAS OIL	
Production	29,899,000
Shipments	33,121,000
Net change in stocks	—3,222,000
Ratio sales to production	110.8%
FUEL OIL	
Production	131,377,000
Shipments	136,431,000
Net change in stocks	—5,054,000
Ratio sales to production	103.8%

MARS PUMPS
For Farm Business



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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

homa refiners drew 2,060,000 gallons from storage, bringing their stocks down to 56,365,000 gallons. In Texas the stock reduction totaled 1,551,000 gallons, bringing stocks down to 70,835,000 gallons.

Gas oil stocks fell to 56,925,000 gallons Nov. 23 as compared with 58,127,000 gallons Nov. 16. Every group in the field reported some reduction.

Crude runs were reduced 18,000 barrels daily average to 296,917,000 barrels a day at the 81 reporting plants. Kansas refiners reported a reduction of 9,000 barrels daily average to 50,173 barrels a day and a reduction of 2,200 barrels daily average in charges of partly refined oils. This cut in runs in Kansas may be attributed to floods which caused some plants in the state to shut down for several days. In Oklahoma the average was only 200 barrels higher. Runs of partly refined oil were increased a little more than 4,000 barrels daily average.

Crude runs in Texas were curtailed 5,728 barrels daily average to 79,896 barrels a day at 28 reporting plants. Other oil charges were cut 700 barrels daily average. Runs at the Texas plants were lower than they have been at any time since June. In north Louisiana and Arkansas crude runs were cut 3,700 barrels daily average to 58,764 barrels a day.

Both production and shipments of gasoline were slightly less. Shipments totaled 37,509,000 gallons, a decrease of 290,000 gallons or 0.8 per cent. Production for the week totaled 42,037,000 gallons, a fall of 930,000 gallons or 1.9 per cent.

With a reduction of 5.8 per cent in crude runs it would appear on the face that gasoline production should be lower than the report shows. It will be observed, however, that cracking operations were increased to produce a half million gallons more gasoline from that source when refiners increased their runs of partly refined oils to stills.

Stocks of gasoline Nov. 23 were 73,260,000 gallons as compared with 66,701,000 gallons a year ago. The increase was 4,528,000 gallons.

Kerosene stocks increased 770,000 gallons to 16,470,000 gallons. All groups reported stock increases except Kansas.

Refinery Promotes Study of Road Oil

ELDORADO, Ark., Nov. 24.—County road commissioners from central and southern Illinois spent two days this week in Eldorado and vicinity, attending a school of instruction conducted by the Lion Oil Refining Co. The school was planned to show the commissioners how road oil is manufactured, loaded and how it can be more easily handled at destination. There were 106 commissioners in the party. Other plants also were visited by the commissioners and a banquet was given in their honor at the Country club here.

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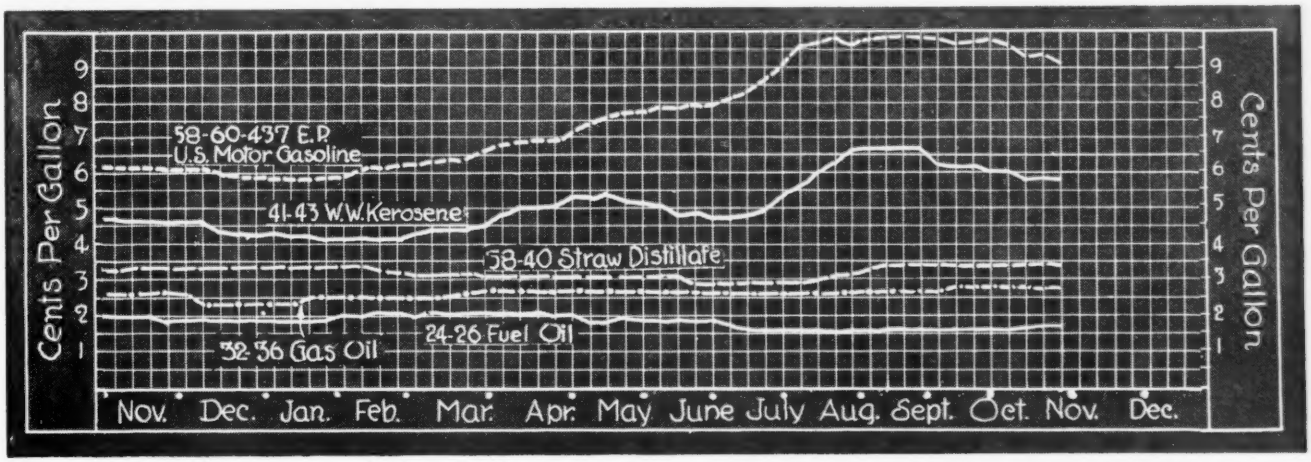
Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Mid-Continent Natural Gasolines And Kerosenes Show Activity

Staff Special
TULSA, Nov. 24

INTEREST in Mid-Continent markets continued to center about lower gasoline quotations during the week ended Nov. 24. The market was generally quiet with price changes only on kerosene, and natural gasolines in Oklahoma, Texas and Louisiana.

Sellers in all sections of the Mid-Continent said gasoline orders were slow for spot shipment but that contract goods moved out regularly. Kerosene also was slow although there was some activity in Texas toward the latter part of the week.

Distillate, and gas oils were in fair demand especially the goods with low cold test. Fuel oils showed no improvement during the week.

Neutral oils, cylinder stocks and waxes were unchanged both in price and demand over the previous week.

Gasoline

While the majority of refiners in Oklahoma continued to quote 9.25 cents on 58-60 U. S. Motor gasoline and prices in effect during the week ended Nov. 17, on high gravity goods, quotations on U. S. Motor 0.25 cent below previous prices were heard. One broker is reported to have offered goods from Group 3 in competition to Kansas refiners at 8.25 cents f.o.b. Oklahoma plants, and a jobber who received his quotation said that he had offered to equalize any freight rate. Whether or not the gasoline was a good product could not be learned. Neither could the source of the broker's gasoline be obtained.

Other quotations of from 8.50 to 9 cents have been encountered, some of the prices for good gasoline. One large Oklahoma refiner continues to sell 58-60 U. S. Motor and 60-62, 437 end point gasoline at 8.50 cents for resale, although his price direct to the trade has so far not been below 8.875 cents. Some of his material moves also at 9.25 cents.

Circulars are being mailed to the trade by a Tulsa broker which lists U. S. Motor gasoline, guaranteed doctor and corrosion, the goods to move from any one of three northern Oklahoma plants, at 8.50 cents. Refiners from numerous sections of the Mid-Continent report meeting up with this broker's quotations.

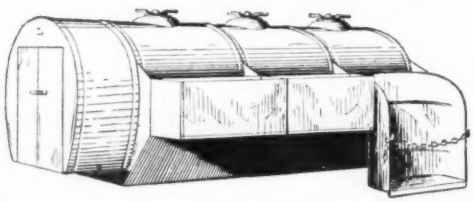
All of the lower priced gasoline is not moving from Oklahoma. Refiners in Texas, Arkansas and Louisiana are also selling goods lower than the prevailing price for shipment within their territories. From West Texas comes reports of goods moving as low as 8.125 cents, although it is reported to be corrosive. Arkansas and Louisiana refiners are selling, in some cases, as low as 8.75 cents for 58-60 U. S. Motor for northern shipment.

One Louisiana refiner who has been dumping some of his surplus gasoline in Ohio, said Nov. 24, that his company had quit shipping gasoline north, that he was in pretty fair shape and that it was no longer necessary. The price of U. S. Motor in Louisiana and Arkansas Nov. 24, was 9.25 cents per gallon for local delivery.

The Texas gasoline market is at 9 cents, although there are persistent

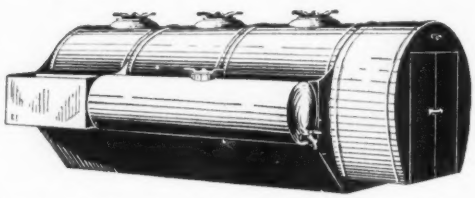
Convertible Truck Tank $150

Capacity Changes to Fit Current Demand and Road Conditions



In an hour a section of the side can racks is replaced with barrel carrier. 50 extra gallons may be carried on each side of the tank. Ride low down without making load top heavy.

Take off two sections of side racks on each side, replace with either 30 or 50 gallon side tanks and extra demand for gasoline, kerosene or lube oil is easily handled. Conversion is made in an hour's time.



Capacity of tank is 375 gallons. Side racks will handle 120 extra gallons in cans. Combination of side racks and side tanks gives up to 140 extra gallons. Combination of side racks and barrel carriers gives 180 extra gallons capacity.

Interchangeable on Chevrolet Trucks or New Ford Truck or others with back of cab lengths around 80 inches. 3-point supported. The tank, the mounting, the pipe lines and the bucket box are welded into an integral unit of steel. $150.00 includes side racks f. o. b. Kansas City. Faucets, side tanks and barrel racks are extra.

COLUMBIAN Partition Mounted 3 Point Supported TRUCK TANK

COLUMBIAN STEEL TANK COMPANY
KANSAS CITY, MISSOURI

"What About The OILGRAM?"

—asked the executive of a gasoline company on the west coast recently of a Tulsa oil man. His answer was . . .

"If you were to wire me for Mid-Continent gasoline prices today, I would phone a member of the OILGRAM staff, and my reply to you would be the *gist of what he told me*. The OILGRAM staff is in direct and close contact with the markets almost every hour of the business day. *They know their business.*"

You too, can have the benefit of this close contact with all phases of the market at all the principal refining and marketing centers.

The service costs only $25 a quarter, or $75 a year, payable in advance. Approximately 30 cents a day—less than the cost of one wire or one phone call.

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CLEVELAND—1213 West Third St.

rumors that gasoline is moving out of the North Texas district for spot shipment at 8.50 cents. A thorough check of the field shows that while there is very little domestic demand for gasoline, there have been no spot sales under 9 cents.

One refiner said that he had sold two or three different accounts during the past week at 9.125 cents. Another refiner, one from whom some of the low quotations were supposed to have originated, said that he had sold no spot gasoline under 9 cents but that he had sold some under that figure for from 30 to 60 days' shipment.

Some of his goods moved at 8.75 cents over November and December, and some at 9 cents for over November. According to refiners in North Texas, there is only one company in that district with any appreciable stock of U. S. Motor in storage, and officers of that company have said they were selling no gasoline on the spot market, that most of it was contracted.

Kansas refiners Nov. 24, were adjusting themselves following several days shut down for three plants because of the flood, and because of hampered shipping due to railroad washouts. Two plants were under water for two or three days and one refiner was forced to buy some gasoline from Oklahoma plants to take care of his regular accounts. An explosion at another plant, also due to the flood, caused refinery operations there to be suspended for several days.

Since the plants have been in operation again, shipments of gasoline from that district have increased. Prices were unchanged with 58-60 U. S. Motor selling at 9.50 cents for Kansas shipment. Some shading of 9.25 cents for Kansas U. S. Motor sold on a Group 3 rate, has been done.

Kerosene

In Louisiana kerosene is scarce, according to refiners and the price on Nov. 19, advanced from 6.50 to 6.75 cents, to 6.75 cents flat. There is very little kerosene made in Louisiana and the demand at present is more than sufficient to take care of the output, refiners say.

Oklahoma sellers were obtaining from 5.75 to 5.875 cents for 41-43 water white kerosene Nov. 24, the high range being 0.125 cent lower than the previous week. 42-44 water white kerosene was selling at 6.25 to 6.375 cents. The lower prices came at the middle of the week when several refiners who were holding their price at 6 cents, went to 5.875 cents.

Texas kerosene was also 0.125 cent lower Nov. 24. Until the last of the week there had been very little activity and stocks were piling up as refiners caught up with their export orders placed some weeks previously.

Nov. 24, however, two or three

large companies, through marketers, were inquiring for 40-42 water white grade, and had made some purchases at 5.50 cents. One refiner said that he had refused to sell 30 cars at that figure. The buying has firmed the market several sellers said.

Arkansas and Kansas prices were unchanged over the previous week although refiners in both districts say that orders were not numerous.

Distillate, Gas Oil and Fuel Oil

While the demand for distillate and gas oil has been good due to colder weather in most of the consuming territory, there has been no price changes for the better any place in the Mid-Continent. In North Texas, due to competition from the Western part of the state, prices were lowered from 2.50 cents flat, to 2.375 to 2.50 cents. Most of the goods moving from West Texas is low cold test while that from North Texas ranges from 20 to 40 degrees. In Oklahoma, zero cold test gas oil is worth from 0.125 to 0.25 of a cent more than ordinary grades.

Fuel oils were unchanged in price with the exception of Texas where a 2.5-cent drop occurred. Refiners in all districts say that fuel oils are moving slowly.

Neutral Oils, Cylinder Stocks, Wax

Neutral oils were unchanged in price and demand with two exceptions. 200 viscosity No. 2 color was selling from 9 to 10 cents, fractionally lower, and 600 E stocks, 140-150 viscosity, at 17.50 to 18 cents which was fractionally higher.

Wax prices were the same at 5 to 5.125 cents for 124-126 white crude scale. Oklahoma sellers reported the demand good.

Natural Gasolines

Natural gasolines were in an unsettled state all week. Prices went lower than they have been for several months, in spite of the fact that grades A and AA were comparatively scarce. Grades BB and C were the soft spots in the market due to colder weather turning much of the production into those grades. Some BB was sold during the week at 7.875 cents for resale. The sale was small and had no bearing in the market but was indicative that apparently lower prices were not far away, according to most manufacturers.

On Nov. 23, four large companies came into the market, absorbed most of the Grade AA, at prices from 8.75 to 9 cents. This buying created a scarcity and Nov. 24, prices on that grade were 9 to 9.125 cents. Grades B, BB and C moved up accordingly, resulting in 8.50 to 8.625 cents for BB and 8.50 cents for Grade C. The latter two grades were also hard to obtain Nov. 24. One company had some BB which was holding at 8.75 cents. Several manufacturers reported they had turned down orders at 8.50 cents. Most of the Grade C was in the hands of one seller and he was quoting 8.50 cents. He sold some off-corrosion goods at 8.375 cents.

One manufacturer estimated that Nov. 23 and 24, the four companies had purchased approximately 300 cars of gasoline.

Chicago Resale Market

Jobbers Buying for Immediate Needs

Staff Special

CHICAGO, Nov. 24

CONDITIONS in the Chicago resale market were generally unchanged this week over last. Jobbers generally continued their policy of buying only enough gasoline to fill immediate requirements and consequently the spot market was dull. Orders were mostly for one and two cars and in many cases for rush shipment.

Refiners, who move the bulk of their gasoline on contract, report that in most cases their jobbers are taking out practically all their contract called for.

Despite the cold weather in some sections and rainy conditions in the southwestern portions of S. O. Indiana territory, gasoline consumption was heavy and continued to run far in excess of the November demand in previous years, most sellers reported.

Another factor which possibly contributed to a quiet market was the I. O. M. A. convention held in Chicago, Nov. 19, 20 and 21. A large number of jobbers were in attendance and consequently were away from their business.

A wide range of prices was in evidence on 58-60 U. S. Motor gasoline in the Chicago market. The large Oklahoma refiners continued to hold their spot price at 9.25 cents and were doing business at this figure. On the other hand, sales of U. S. Motor were heard as low as 8.50 cents, although the majority of marketers and the smaller refiners were moving their goods at 8.75 to 9 cents.

Some gasoline was moving into this territory from Texas at around 8.25 and 8.50 cents, but in most cases this goods failed to meet U. S. Motor specifications. The average price for full specification U. S. Motor gasoline was apparently close to 9 cents as the week closed Nov. 24.

That there would be a further reduction in U. S. Motor gasoline price by major refiners early in the coming week was a general opinion in the Chicago trade. This reduction is to be expected, they point out, as gasoline prices always fall this season of the year and there is still a considerable margin between most contract prices and the high range of the spot market. A further reduction in the high range would bring jobbers in the market more freely, they think.

Colder weather throughout the territory has brought an increased demand for the higher gravity gasolines, most sellers reported. This increased call was coming mostly from northern portions of Standard of Indiana territory. Prices were generally unchanged.

The 64-66, 375 e.p. gasoline moved mostly at 10.25 to 10.50 cents all week. While the 60-62, 400 e.p. grade was sold at 9.625 to 9.875 cents the bulk of goods moved at 9.75 cents flat. Most sales of 60-62, 437 e.p. gasoline were at 9.25 to 9.50 cents until Nov. 24 and closed the week at 9 to 9.50 cents.

While the demand for kerosene was very light all week, few price reductions were made. Practically all sellers were asking 5.75 cents for 41-43 w.w. kerosene as the week closed Nov. 24. The price range up to Nov. 24 was 5.75 to 5.875 cents. One or two refiners continued to ask 6 cents for this product but they had only a small stock on hand and were not trying hard to move it.

The bulk of activity in the heavy oil market this week was confined to distillate, zero gas and fuel oils. Demand for these products has been comparatively heavy considering the mild weather, with most of the demand from furnace oil distributors. Ordinary gas oil and the heavy, high cold test fuel oils were generally quiet. Industrial buying has increased somewhat the past week, several sellers reported.

Distillate prices remained unchanged over the week. The 38-40 straw sold mostly at 3.375 to 3.50 cents with a few sales at 3.25 and 3.625 cents.

Gas oil prices were also unchanged with 32-36 ordinary dark grade bringing 2.50 to 2.625 cents; 32-36 dark zero, 2.75 to 2.875 cents, and 32-36 straw zero selling mostly at 2.875 to 3 cents.

Fuel oils were selling mostly at $0.875 to $0.925 for zero 28-30; $0.825 to $0.85 for ordinary 28-30; $0.65 to $0.675 for 24-26; $0.60 to $0.65 for low sulfur 18-22, and $0.525 to $0.55 for high sulfur 18-22 fuel oil.

Temperatures will be mostly near normal in Standard of Indiana territory next week with some precipitation likely, especially in Great Lakes region.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

	Prices Nov. 26	Prices Nov. 19	Prices Nov. 12
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	9.1925	9.3163	9.3485
60-62 437 e.p. gasoline...	9.3750	9.5313	9.5893
60-62 400 e.p. gasoline...	9.8438	9.7500	No sales reported
64-66 375 e.p. gasoline...	10.5625	10.7500	10.7500

In this issue, all above weighted average prices are effective on Monday on the dates shown at the top of the columns.

GASOLINE sales on the Group 3 Oklahoma spot market, as reflected by the above prices, continued to show the effect of cooler weather and stiffer competition from refiners in areas outside of Oklahoma. These refiners, as a general rule, have very little storage capacity, and are quicker to sense the slower movement in gasoline. To keep as much of their production moving as possible the past week they have been cutting their prices considerably under those quoted by Oklahoma refiners.

A few small refiners in Oklahoma who do not report have cut their prices in line with those from areas outside the state, but the volume of goods moved direct to the jobbers has been so small that had they been reporting their prices would not have materially reduced the weighted average of U. S. Motor.

(The above weighted averages are made up from confidential daily reports of all gasoline spot market sales—for shipment in 10 days—from Oklahoma refineries only and representing 85.2 per cent of the state's refining capacity. The above prcies do not include prices on sales for "over the month," for contracts, or to brokers or on shipments to company owned stations. Records of the reporting refiners are checked periodically to verify the accuracy of their reports—Editor.)

OKLAHOMA			
48-50 450 e.p. naphtha...	†8.50 – 8.75	†8.75	†8.75
50-52 450 e.p. naphtha...	†8.50 – 8.75	†8.75	†8.75
56-58 450 e.p. gasoline...	8.875– 9.125	8.875– 9.125	8.875– 9.125
58-60 450 e.p. gasoline...	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
64-66 390 e.p. gasoline...	10.00 –10.375	10.00 –10.375	10.00 –10.375
68-70 350-360 e.p. gasoline	10.75	10.75	10.75
PENNSYLVANIA			
52-54 Naphtha.....	9.25 –10.50	9.50 –10.50	10.25 –10.50
54-56 Naphtha.....	9.25 –10.75	10.25 –10.50	10.50 –10.75
58-60 U.S. Motor 437 e.p.	10.50 –11.00	10.75 –11.25	10.75 –11.50
60-62 400-410 e.p. gasoline	11.00 –12.00	11.00 –12.00	11.50 –12.00
64-66 390 e.p. gasoline...	12.25 –13.00	12.00 –13.00	12.25 –13.00
68-70 Str-run gas. 350-360 e.p.....	13.25 –13.50	13.00 –13.50	13.25 –14.00
OHIO (Quotation of S. O. Ohio.)			
58-60 U.S.Motor, delivered in Ohio, tax to be added	11.75	12.25	12.25
KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	9.50	9.50	9.50
60-62 400 e.p. gasoline...	10.25	10.25	10.25
64-66 375 e.p. gasoline...	10.75 –11.00	10.75 –11.00	10.75 –11.00
NORTH TEXAS			
48-52 450 e.p. naphtha...	†8.50 – 8.75	†8.50 – 8.75	†8.75
56-58 450 e.p. gasoline...	†8.75	†8.75	†8.75
58-60 450 e.p. gasoline...	†8.75	†8.75	†8.75
58-60 U.S. Motor 437 e.p.	9.00	9.00	9.00
60-62 400 e.p. gasoline...	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
64-66 390 e.p. gasoline...	9.75	9.75	9.75
64-66 375 e.p. gasoline...	10.00	10.00	10.00
68-70 350-360 e.p. gasoline	10.75	10.75	10.75
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	9.25	9.25	9.25 – 9.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline...	8.50 – 8.75	8.50 – 8.75	9.00
58-60 450 e.p. gasoline...	9.00	9.00	9.25
58-60 U.S. Motor 437 e.p.	9.25	9.25	9.25 – 9.50
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	9.00 –12.50	9.00 –12.50	9.00 –12.50
58-61 U.S. Motor 437 e.p.	10.00 –13.50	10.00 –13.50	10.00 –13.50
42-45 Eng. dis. 445-480 e.p.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery.....	9.125	8.75 – 9.00	9.25 – 9.375
Grade A, 72-79.9, 90% Recovery.....	9.125	8.75 – 9.00	9.25 – 9.375
Grade BB, 84-92, 85% Recovery.....	8.50 – 8.625	8.375– 8.50	9.00 – 9.25
Grade B, 76-83.9, 85% Recovery.....	8.50 – 8.625	8.375– 8.50	9.00 – 9.25
Grade C, 80-92, 78% Recovery.....	8.50	8.25 – 8.375	9.00 – 9.125
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery.....	9.125– 9.25	8.75 – 9.00	9.375
Grade A, 72-79.9, 90% Recovery.....	9.125– 9.25	8.75 – 9.00	9.375
Grade BB, 84-92, 85% Recovery.....	8.50 – 8.625	8.375 –8.50	9.125– 9.25
Grade B, 76-83.9, 85% Recovery.....	8.50 – 8.625	8.375– 8.50	9.125– 9.25
Grade C, 80-92, 78% Recovery.....	8.50	8.25 – 8.375	9.125
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA.....	†9.50 – 9.625	†9.25 – 9.50	†9.75
Grade BB.....	†9.00 – 9.125	†9.00	†9.50
Grade C.....	†9.00	†8.75 – 9.00	†9.375– 9.50
CALIFORNIA			
75-85, 375-390 e.p. blend	7.00 – 7.25	6.50 – 7.50	6.50 – 7.00

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.....	8.75 – 9.00	8.75 – 9.25	8.75 – 9.25

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene.....	7.25 – 7.625	7.25 – 7.625	7.25 – 7.50
46 w.w. kerosene.....	7.50 – 8.00	7.625– 8.00	7.75 – 8.00
47 w.w. kerosene.....	7.875– 8.25	8.00 – 8.25	8.00 – 8.50
300 mineral seal.....	7.25 – 7.50	7.25	7.25 – 7.75
OKLAHOMA			
41-43 w.w. kerosene.....	5.75 – 5.875	5.75 – 6.00	5.75 – 6.00
42-44 w.w. kerosene.....	6.25 – 6.375	6.25 – 6.50	6.25 – 6.50
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	6.00 – 6.25	6.125– 6.25	6.125– 6.25
42-44 w.w. kerosene.....	6.50	6.50	6.50
NORTH TEXAS			
40-42 w.w. kerosene.....	5.50 – 5.625	5.625– 5.75	5.625– 5.75
41-43 w.w. kerosene.....	5.75 – 5.875	5.875– 6.00	5.875– 6.00
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	6.75	6.75	6.50 – 6.75
ARKANSAS (Arkansas destination only)			
42-44 kerosene.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
CALIFORNIA			
38-40 w.w. kerosene.....	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00

NEUTRAL OIL

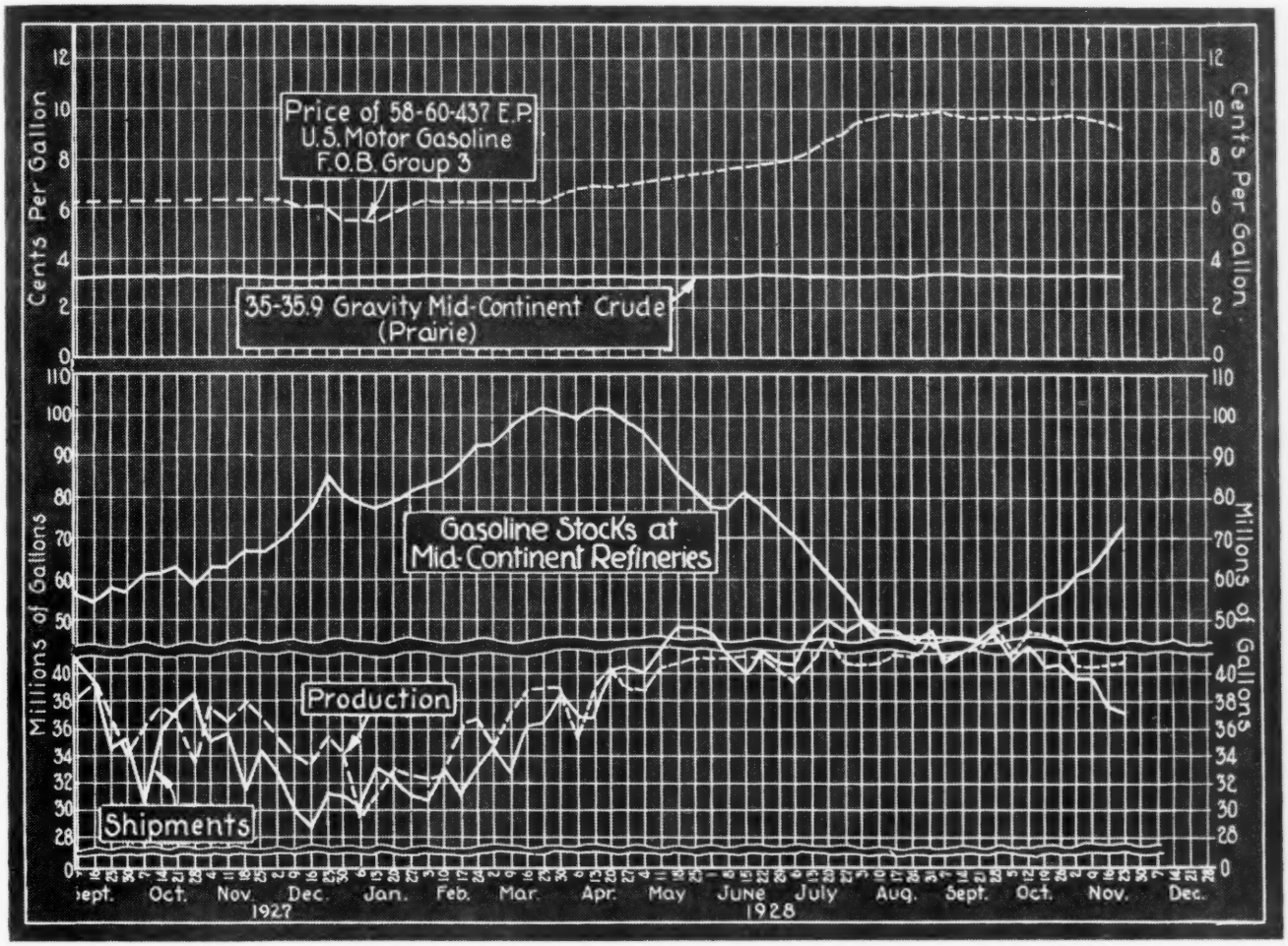
Vis.			
PENNSYLVANIA			
	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.....	28.00 –29.00	28.00 –29.00	28.00 –29.50
180 No. 3 Assoc. Filt.....	24.50 –27.00	25.00 –27.00	25.50 –27.50
150 No. 3 Assoc. Filt.....	21.00 –23.00	21.50 –23.00	21.50 –23.00
	(Non Viscous)		
34 Grav. 330-340 Flash.	7.25 – 8.00	7.25 – 9.00	7.50 – 9.00
36 Min. Neut., 300-305 Flash.....	7.50 – 8.00	6.75 – 7.75	6.75 – 7.75
****OKLAHOMA**			
Vis. Color	**(Viscosity at 100°F.)**		
100—No. 2.....	5.50 – 6.50	5.50 – 6.50	5.50 – 6.50
150—No. 3.....	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150—No. 4.....	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180—No. 3.....	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
180—No. 4.....	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180—No. 5.....	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3.....	9.00 –10.00	9.50 –10.25	9.50 –10.25
200—No. 4.....	9.25 –10.00	9.25 –10.00	9.25 –10.00
200—No. 5.....	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5.....	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3.....	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4.....	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3.....	14.00 –15.50	14.00 –15.50	14.00 –15.50
280—No. 4.....	13.00 –14.50	13.00 –14.50	13.00 –14.50
280—No. 5.....	12.00 –14.00	12.00 –14.00	12.00 –14.00
300—No. 5-6.....	15.00 –17.00	15.00 –17.00	15.00 –17.00
GULF COASTAL			
Vis. Color	**(Viscosity at 100°F., pour test 0)**		
100—No. 2 Unfilt. Pale..	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale..	10.00 –10.75	10.00 –10.75	10.00 –10.75
300—No. 3 Unfilt. Pale..	11.00 –11.75	11.00 –11.75	11.00 –11.75
500—No. 3½ Unfilt. Pale	12.50 –13.50	12.50 –13.50	12.50 –13.50
750—No. 4 Unfilt. Pale..	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil....	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
300—No. 5½ Red Oil....	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
500—No. 6 Red Oil.....	10.50 –11.25	10.50 –11.25	10.50 –11.25
750—No. 6 Red Oil.....	13.50 –14.00	13.50 –14.00	13.50 –14.00
CALIFORNIA			
Vis. Color	**(Viscosity at 100°F.)**		
100—No. 3.....	9.75 –10.00	9.75 –10.00	9.75 –10.00
200—No. 3.....	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3.....	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3.....	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3.....	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3.....	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5.....	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5.....	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5.....	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5.....	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5.....	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7.....	18.00 –18.50	18.00 –18.50	18.00 –18.50

†Prices nominal ††Only one refiner quoting *Quotations only

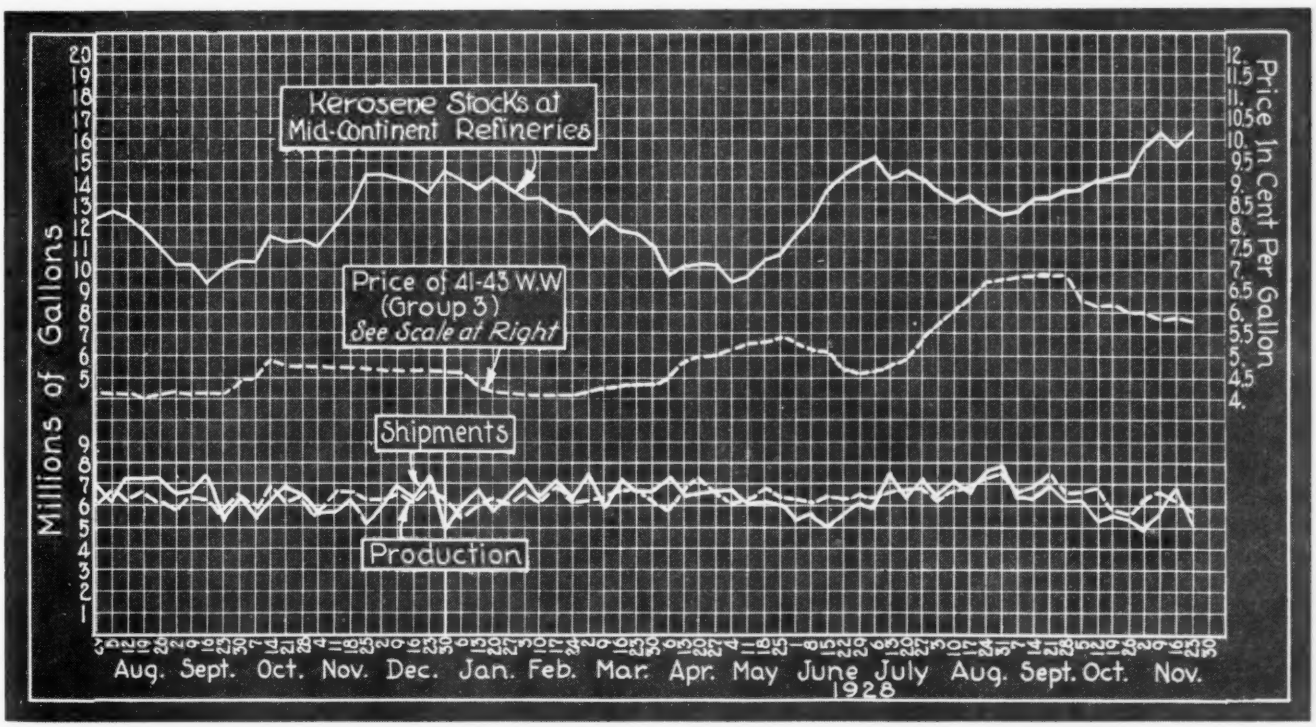
**Represents both sales and quotations

Barometer of Mid-Continent Refinery Market—Week Ending November 23

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 81 Plants to National Petroleum News


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on the opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov.
1928

Refinery Markets on Wax, Lubricants and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

CYLINDER STOCKS

**OKLAHOMA	Prices Nov. 26	Prices Nov. 19	Prices Nov. 12
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	27.00	27.00	27.00
600 E. St. 140-150 Vis.-210°	17.50 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green..	7.50 –10.00	7.50 –10.00	7.50 –10.00
600 St. Ref. Dark Green..	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	**(1-inch Immersion Test)**		
600 Steam Refined	17.00	14.50 –16.00	14.50 –15.50
650 Steam Refined	20.00	16.50 –19.00	17.00 –18.50
600 Flash	22.50 –24.00	22.00	21.00 –22.00
625 Flash	33.00 –35.00	31.00 –32.00	28.00 –30.00
600 Warren E	19.50 –21.00	19.00 –19.50	19.50 –20.00
600 Oil City E	18.00 –19.00	17.00 –19.00	17.50 –19.00
600 D Filtered	25.00	25.00	24.50 –25.50
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	34.00 –35.50	33.50 –35.50	‡33.50 –35.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	33.50	32.00 –33.50	‡‡32.00–33.00

‡Three refiners quoting. ‡‡Two refiners quoting.

WAX

PENNSYLVANIA Per pound, New York			
122-124 white crude scale	5.00 – 5.25	5.00 – 5.25	5.00 – 5.50
124-126 white crude scale	5.125– 5.25	5.00 – 5.25	5.25 – 5.50
OKLAHOMA			
**124-126 White Crude Scale	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)			
36-40 fuel oil	4.625– 5.00	4.50 – 5.00	4.625– 5.00
30-34 fuel oil	4.375– 4.50	4.25 – 4.50	4.25 – 4.50
28-32 fuel oil	4.375– 4.50	4.25 – 4.50	4.25 – 4.50
OKLAHOMA			
38-40 straw distillate	3.375– 3.50	3.375– 3.50	3.375– 3.50
36-38 straw distillate	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
32-36 gas oil, straw	†2.625– 2.875	†2.625– 2.875	†2.625– 2.875
32-36 dark gas oil	‡2.50 – 2.75	‡2.50 – 2.75	‡2.50 – 2.75
28-30 fuel oil (in bbls.)	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
26-28 fuel oil (in bbls.)	$0.675– 0.725	$0.675– 0.725	$0.675– 0.725
24-26 fuel oil (in bbls.)	$0.65 – 0.675	$0.65 – 0.675	$0.65 – 0.675
22-26 fuel oil (in bbls.)	$0.55 – 0.625	$0.55 – 0.625	$0.55 – 0.625
18-22 fuel oil (in bbls.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
16-18 fuel oil (in bbls.)	$0.55	$0.55	$0.55
14-16 fuel oil (in bbls.)	$0.525– 0.55	$0.525– 0.55	$0.525– 0.55

‡Zero cold test gas oil sells for 0.125 to 0.25 cent higher.

	Prices Nov. 26	Prices Nov. 19	Prices Nov. 12
KANSAS (F. O. B. refinery Kansas destination)			
38-40 straw distillate	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
36-38 straw distillate	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
32-36 gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	*$0.75– 0.80	*$0.75 – 0.80	*$0.75 – 0.80
18-22 fuel oil	*$0.70	$*0.70	*$0.70
NORTH TEXAS			
38-40 straw distillate	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
32-36 gas oil, cracked	2.375– 2.50	2.50	2.50
32-36 St. reduced gas oil	2.375– 2.50	2.50	2.50
24-26 fuel oil (in bbls.)	$0.525– 0.55	$0.55	$0.55
GULF COASTAL			
Fuel (in bbls.)	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	3.00	3.00	3.00
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
16-20 fuel oil (in bbls.)	$0.70	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	3.00	3.00	3.00
28-32 gas oil	2.75	2.75	2.75
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (per bbl.)	$0.60 –$1.00	$0.60 –$1.00	$0.60 –$0.70
14-18 Bunker oil (per bbl.)	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
30-34 gas oil (per bbl.)	$1.00 –$1.20	$1.00 –$1.20	$1.00 –$1.20
27 Plus Diesel oil (per bbl.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. ⅛c to ¾c per pound less.)		In tank cars Two refiners quoting.	
Snow White	8.50 – 8.625	8.50 – 8.625	8.375– 8.625
Lily White	7.625	7.625	7.375– 7.625
Cream White	6.625	6.625	6.625
Light Amber	3.625– 3.875	3.625– 3.875	3.625– 3.875
Amber	3.375– 3.50	3.375– 3.50	3.375
Red	3.125– 3.25	3.125– 3.25	3.125

PETROLEUM COKE

**OKLAHOMA (Per ton in car lots)			
Lump	$4.50 – 5.00	$4.50 –$5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations

California Refinery Market

Contract for Natural Gasoline

Staff Special
LOS ANGELES, Nov. 24

CONTRACTS are now being placed with Independent natural gasoline manufacturers in California, calling for a total of approximately 25,000,000 gallons of natural gasoline for delivery over a year and it is understood that contracts name prices within a range of 7 to 7.50 cents.

Although no official announcement has been made, it is understood that this natural gasoline will be exported through the Panama Canal. To move natural gasoline in tankers it is necessary that it be well stabilized, have a 90-93 per cent recovery. It is customary to add as a blend approximately 25 per cent of U. S. Motor or some similar product.

As a result of these new contracts being placed, the spot natural gasoline market is showing some strength. Very little of this product is available at less than 7.50 cents. Major companies are contracting with Independents for their output, mostly over a 3-year period.

In most instances the contracts name a flat price of 7 to 7.50 cents for the first year, a similar price for the second year and provide for the fixing of a different price for the third year through mutual agreement or some other means.

As far as known, no contracts have been made recently for gasoline for export. It is understood that U. S. Motor can be bought from one refiner at around 8 cents while others want 8.25 or better. Buyers prefer 390 and 400 end point with 400 end point available at 8.50 to 9 cents, while 375 end point is held at 9.50 to 10 cents. There is very little U. S. Motor for sale.

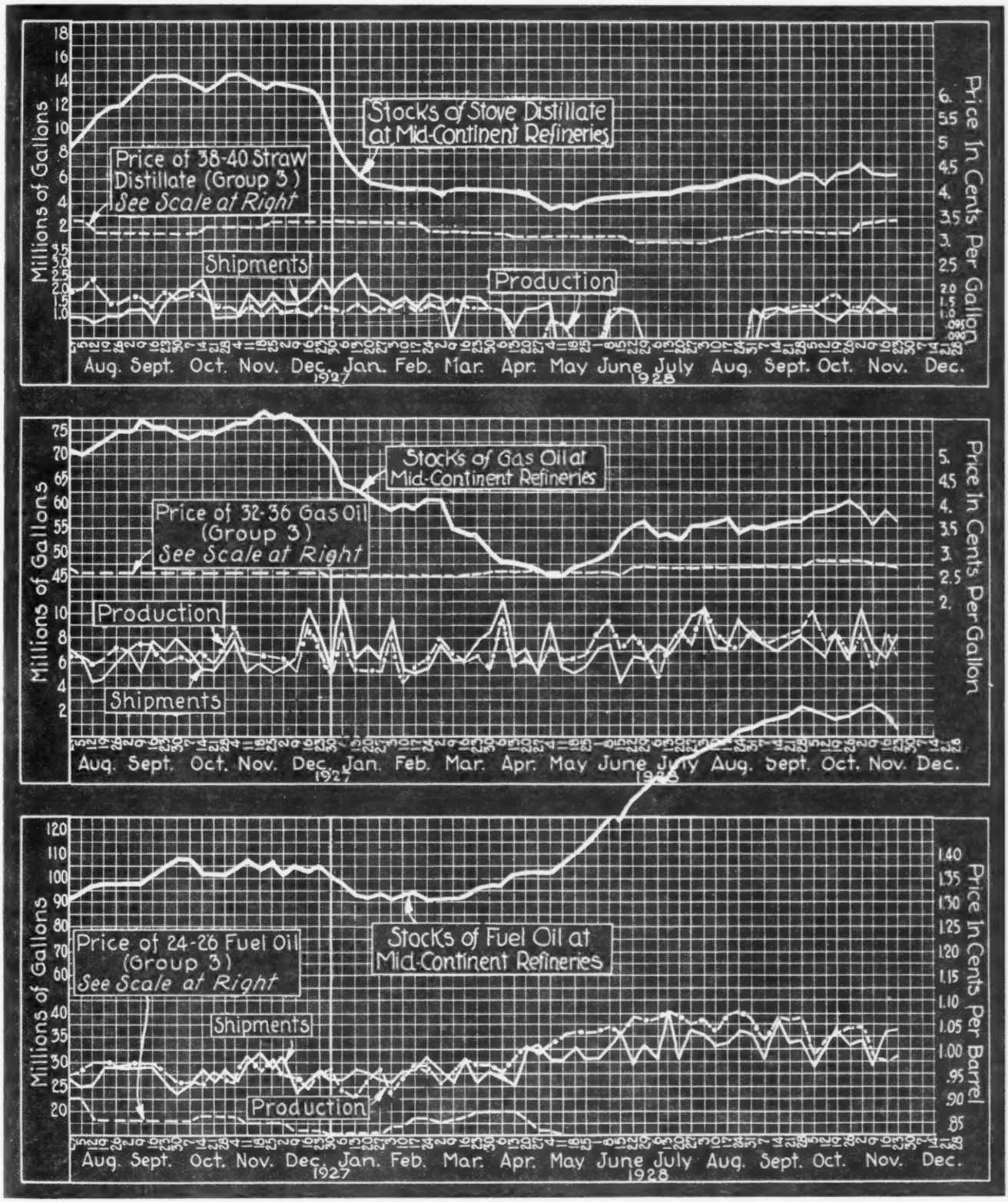
The tank car market is showing no actual change in quotations, although there seems to be some new strength especially with reference to shipments within the state. Shipments outside of the state are still moving around 9 to 9.50 cents and there is nothing for sale for less than 10.50 cents within the state.

The fuel oil market is barely holding its own with this product moving in tank cars around 60 cents. A few cars at times are available at 55 cents a barrel. It is rumored that some fuel can be purchased in cargo lots around 65 cents, although most of the larger companies refuse to consider less than 70 cents.

Barometer of Mid-Continent Refinery Market

Week Ending November 23

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 81 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928

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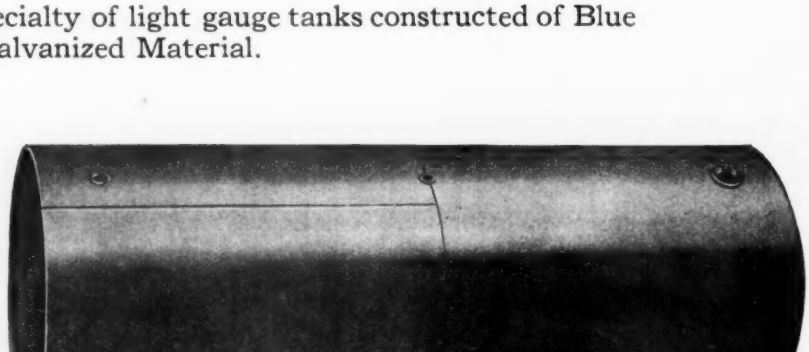

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Gasoline, Gas Oils, Petroleum Coke

FUEL OILS

LUBRICATING OILS

Cylinder, Engine, Cordage

RED AND PALE PARAFFINE OILS

Pennsylvania Market

Neutrals Become Active

CLEVELAND, Nov. 26.—Neutrals, cylinder stocks, and bright stocks were active today in the western Pennsylvania market. Gasoline was reported in good demand. Kerosene and wax were selling in fair quantities.

Buyers were active in the viscous neutral market last week and were circulating inquiries today on quantities ranging up to 25 cars for December delivery. The 150 No. 3 color was in most demand. Quotations today advanced 0.50 to 1 cent on the three chief neutral grades.

Most of the refiners are sold up on the 600 and 650 steam refined stocks. A canvass of the field showed three refiners quoting these grades, asking 17 cents for 600 and 20 cents for 650 steam refined. Other grades are scarce also and have been advancing the last week.

Bright stocks continued to be scarce. The light bright market has advanced to 34 to 35.50 cents and the dark bright is quoted at 33.50 cents. Export buying has been heavy in bright stocks and many refiners are out of the market.

More refiners are sold up on gasoline as November comes to an end. In fact, many refiners are well sold up on most commodities. Gasoline demand has been good for the past week. Production is meeting shipments and refiners have not been putting goods into storage. U. S. Motor gasoline is quoted at 10.50 to 11 cents, with the majority of refiners asking 10.75 cents, some 11 cents and a few are offering goods to the trade at 10.50 cents. Higher gravity gasoline prices are unchanged.

Fuel oil demand continued to perk up. Quotations have advanced also. The 36-40 grade is quoted generally at 4.75 and 5 cents with the market range 4.625 to 5 cents. The 30-34 and 28-32 grades are quoted at 4.375 to 4.50 cents.

Demand Keeps Up For Gulf Lubes

HOUSTON, Nov. 26.—Manufacturers of zero cold test lubricants in Houston district report continued satisfactory demand. Movement is fairly well distributed among the various grades. Northern buyers for winter requirements lead in taking out goods. Prices are unchanged from Nov. 19.

LOS ANGELES, Nov. 23.—A natural gasoline plant for the State Gasoline Co. is being erected at the corner of 27th and St. Louis streets, Long Beach, by the J. A. Campbell Co. The plant will have a daily capacity of 10,000 gallons.

Wax Market

Market Is Quiet

NEW YORK, Nov. 24.—Export wax markets were extremely quiet the past week with prices of all grades of scale and fully refined showing no material change over the week. According to the views of several large factors, the market could not be characterized as weak nor, at the same time, were there any signs of strength apparent.

With the market lacking a period of active buying since the latter part of August, the trade for the most part has now given up looking for any renewal of activity until the end of December. It is felt in a good many quarters that foreign buyers will show more interest in the market at that time, inasmuch as purchases made then would reach them after inventories had been taken.

White crude scale was quoted at 5 to 5.25 cents a pound by most dealers in the New York market and at New Orleans scale was held at 5 to 5.125 cents. On firm offer it was reported possible to shade the lower figure.

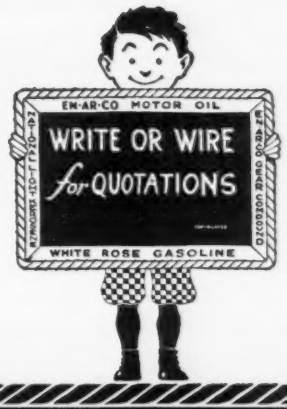
The fully refined grades were fairly firm with 125-127 A.m.p. quoted at 5.75 to 5.875 cents at New York and 5.875 to 6 cents at New Orleans.

The Chicago Post Office In Gasoline Market

CHICAGO, Nov. 23.—The Chicago Post Office will open bids on Dec. 4 for the purchase of its gasoline requirements for the first three months of 1929, approximately 250,000 gallons. Currently the post office is being supplied by Jewett & Sowers Oil Co.

Ordinarily the Chicago Post Office buys its gasoline in Oklahoma for shipment in car lots to Chicago but payment is made the refiner from Washington. The seller, as a rule, furnishes the motor vehicle service department of the post office with tank car storage and makes a slight charge for unloading the cars in Chicago, but the Post Office serves its own motors with its own tank trucks through its own garages.

By coming into possession of the gasoline in Oklahoma and shipping from there to itself in Chicago the Post Office is able to save considerable freight because it (along with other government departments) enjoys "land grant rates" from the railroads. Freight saving on Government gasoline is about 1 cent a gallon from Group 3 to Chicago.



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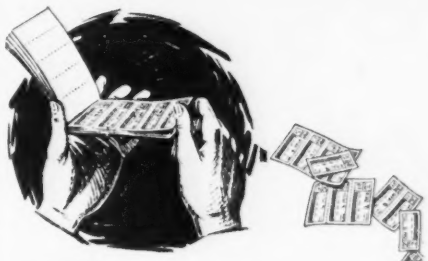


"Fill 'er Up"

—Says the Owner of a Coupon Book

The owner of a coupon book does not shop for five gallons here and a quart of oil there—he buys all his gas and oil from the same stations—YOUR stations—where his coupons are good as cash. It's easy to sell coupon books and you get the profit on ten dollars instead of on one sale. Write today for the new catalog of accurately printed Allison Coupon Books.

Allison Coupon Co.
Indianapolis, Ind.
Accuracy Since 1888

New York Domestic Market

Gasoline Easier but Prices Hold

Staff Special
NEW YORK, Nov. 24

WHILE eastern gasoline markets displayed a decidedly easier tone the past week, no general recessions in prices were noted along the Atlantic seaboard. Jobbing demand slowed up considerably after the spurt it took with the summerlike weather that prevailed along the east coast last week.

The slack spot demand for gasoline this week apparently had no great depressing effect on the trade. It was regarded more or less as seasonal and consequently to be expected.

The majority of eastern jobbers, particularly those situated close to distributing points, have their stocks down now to the point where they are working virtually on a day-to-day basis. Evidence of this fact is seen in the regular number of small lot orders the large sellers are recording on their books, and the almost complete absence of deferred shipment buying.

The jobber's present attitude toward the market, according to the views of several of the trade, is to be expected especially in view of the easier gasoline markets prevailing in other important refining centers in the country. Sellers seemed to be satisfied with the volume of business they are receiving, and assert that competition from outside areas will have to go still lower before they will be willing to lower their prices.

Competition for business among sellers along the seaboard has been a little keener this week, but the fighting ground has been sufficiently remote from the seaboard so that it hasn't affected prices for shipment into what is generally conceded as the seaboard's territory.

At least one large company shipping from New York harbor has been selling U. S. Motor gasoline in western Pennsylvania the past week, in competition with Philadelphia and Baltimore, at 12.35 cents, delivered. This gives a net back of 10.50 cents at the harbor.

The total volume of goods involved was reported negligible in comparison to shipments of other companies into normal territory and for this reason could hardly be representative of the general market. Philadelphia and Baltimore sellers up to Saturday had not met the competition, but at least one operating out of both districts asserted he would not stand by much longer.

California gasoline at New York harbor was about the firmest spot in eastern markets. Jobbers are showing greater preference for this grade in view of its quick-starting properties which make it better for a winter motor fuel. According to reports, the supply of California gasoline on the east coast particularly in the New York harbor district is none too plentiful. Two of the largest sellers are out of the open market temporarily because of heavy shipments to contract customers, and there is some talk of their again asking a 0.25-cent premium for California goods.

Resale agents, if their regular customers insist on California gasoline, are having to pay the same price quoted generally to the jobbing trade, and the customer therefore is being taxed to the extent of 0.25-cent. One resale agent reported selling approximately 15 cars of California gasoline at 11.25 cents this week.

A large seller of California gasoline who operates in the Baltimore and Philadelphia markets, and who oftentimes secures some of his requirements from the harbor stated he was unable to do so this week.

The shortage of California gasoline is not expected to be of long duration, however. Several large shipments are said to be on their way east now, and U. S. Motor can be bought on the west coast at a laid down cost of approximately 10 cents, against the 11-cent tank car markets.

Prices of other oils also were generally unchanged this week in eastern tank car markets. Kerosene demand was brisk with most companies reporting a goodly number of sales of water white at 9 cents. There was a steady call for gas oil from gas companies and industrial users at prices ranging from 4.75 to 5 cents a gallon. The colder weather this week also stimulated the spot demand for domestic burning oils, and shipments against contracts were said to be large.

Gulf Export Market

Foreign Buying More Active

Staff Special
NEW YORK, Nov. 24

GULF export markets took on new life this week with the entrance of several European buyers into the market for cargoes of gasoline and kerosene. None of the inquiries, except those for three small part cargoes of gasoline, is in the form of definite business as yet, but the export trade generally is of the opinion that it foreshadows a renewal of active buying from abroad. A much brighter feeling was noticeable among the trade as a result.

The situation at the Gulf remains virtually the same as it was a week ago. Suppliers are not overly anxious for business, that is, so much so as to occasion any material recession in prices. In view of the low-priced business taken last week, however, there were one or two suppliers who said they might shade the "current market" if such action was necessary, rather than to pass up any business.

A small French buyer entered the market early this week for approximately 40,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for January shipment. The inquiry was considered a "market feeler" inasmuch as the buyer postponed closing until next week.

The French subsidiary of a leading refiner chartered a ship through London this week for three trips to the United States, and sources who were quite sure of their information reported the company would be in the open market next week for approximately 70,000 barrels of gasoline, one-third U. S. Motor and two-thirds 64-66, 375 end point.

An English buyer entered the market Wednesday for a full cargo of California gasoline for December shipment, specifying 61-63, 390 end point material. This class of goods is said to be comparatively hard to obtain in California at the present time, and it was doubtful if the buyer could secure his requirements. One large supplier counter-offered 58-60, 375 end point straight run gasoline at 9.50 cents, f.o.b. California.

A leading Independent company made known the details of three mixed cargoes sold to its French subsidiary during the last 10 days. Approximately 150,000 barrels of gasoline and kerosene were included in the three transactions. The prices paid were as follows: U. S. Motor gasoline, 9.375 cents; 61-63, 390 end point gasoline, 11.125 cents; 64-66, 375 end point gasoline, 11.50 cents; prime white kerosene, 6.75 cents; water white kerosene, 7.875 cents. The company stated this business had practically cleaned out its stocks

at the Gulf and in all probability it would be unable to quote on any open market business for some time.

In some quarters the opinion was expressed that U. S. Motor gasoline would likely sell at 9.25 cents in the next open market transaction and the 64-66, 375 end point grade at 11.25 cents. Prime white kerosene was a bit more plentiful than water white and it was also stated that 6.75 cents could probably be shaded for this oil.

The inquiry from a large French company early this week for a cargo of Mid-Continent crude oil that will yield a minimum of 25 per cent gasoline aroused considerable interest among the export trade. The company has not been operating its refinery for some time past, and there was much conjecturing among the trade about the likelihood of refining on a large scale being resumed in France.

Heavy oils are a shade more active at the Gulf. A domestic buyer was in the market for 80,000 barrels of uncracked gas oil. An offer was made Friday at 3.875 cents a gallon and the deal is expected to be closed early next week.

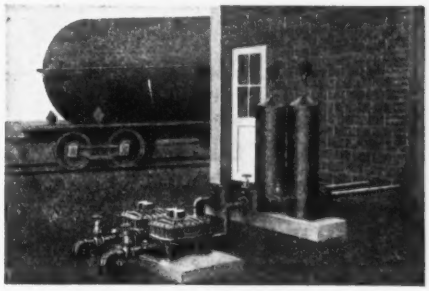
Cargoes of grade C bunker oil were quoted slightly higher by a few suppliers, but they were still available at $0.65 a barrel in several directions. Bunker prices were unchanged at $0.85 in the New Orleans district and 10 cents a barrel higher further west in the Gulf.

1927 Illinois Gas Tax Goes to the State

CHICAGO, Nov. 23.—Funds paid by the oil industry to the state of Illinois under its unconstitutional gasoline tax law in force during part of 1927 and 1928, will not likely be recovered. The court in Springfield reviewing a test case has decided that the money belongs to the state.

The legislature has appropriated the money to be used on secondary roads of the state but it cannot be so used at once. The same question is being tried in federal courts in Illinois by certain companies that are not citizens of the state, and the money must remain undisbursed until all the courts have reached the same decision.

Illinois voted a 2-cent gasoline tax in the summer of 1927. It went into effect on Aug. 1 of that year. The Supreme Court threw it out as unconstitutional in March, 1928. A scramble for the tax money started then and has been going on ever since. The state, the oil companies and the public made up a three-sided fight.



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56-58 U. S. Motor

A Winter Grade With Anti-Knock Value

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58/60 U. S. Motor Gasoline
60/62 400 E. P. Gasoline
68/70 Aviation Gasoline
High Compression Gasoline
42/44 Kerosene
Zero Furnace Oils
28/32 Gas Oil (Straw)
32/36 Gas Oil (Straw)
Tractor Fuel
Diesel Fuel
16/20 Fuel Oil
Road Oils
Transmission Oils

"We Meet Equivalent Competition"

IMPERIAL REFINING COMPANY

General Offices
TULSA, OKLAHOMA

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

	Nov. 26	Nov. 19	Nov. 12
U. S. MOTOR GASOLINE			
New York harbor	11.00	11.00	11.00
Portland district	*13.25	*13.25	*13.25
Boston district	*12.75	*12.75	*12.75
Providence district	*12.75	*12.75	*12.75
Philadelphia district	11.00	11.00	11.00
Baltimore district	11.00	11.00	11.00
Norfolk district	11.00 -11.25	11.00 -11.25	11.00 -11.25
Charleston district	11.00 -11.25	11.00 -11.25	11.00 -11.25
Savannah district	11.00	11.00	11.00
Jacksonville district	11.00	11.00	11.00
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor	11.00 -11.25	11.00	11.00
Philadelphia district	11.00	11.00	11.00
Baltimore district	11.00	11.00	11.00
WATER WHITE KEROSENE			
New York harbor	9.00	9.00	9.00
Philadelphia district	9.00	9.00	9.00
Baltimore district	9.00	9.00	9.00
GAS OIL: 28-34 Gravity			
New York harbor	4.75 - 5.00	4.75 - 5.00	4.75 - 5.00
Boston district	4.75 - 5.00	4.75 - 5.00	4.75 - 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.50	6.50	6.50
Boston district	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50
GRADE C BUNKER OIL			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00	$2.00	$2.00
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.80 - 0.90	$0.80 - 0.90	$0.80 - 0.90
870-875 s.g., 150-155 vis.	$0.67 - 0.77	$0.67 - 0.77	$0.67 - 0.77
860-865 s.g., 80-85 vis.	$0.65 - 0.75	$0.65 - 0.75	$0.65 - 0.75

Note: Above gasoline prices do not include inspection tax levied in some states
*Minimum delivered.

New York Export Market

(Gasoline and kerosene in cases; in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products)

	Nov. 26	Nov. 19	Nov. 12
U. S. Motor gasoline	26.40	26.40	26.40
43-45 150 w.w. kerosene	18.90	18.90	18.90
42-44 110 s.w. kerosene	17.65	17.65	17.65
CYLINDER OILS			
Bright stock, dark	40.00 -41.50	39.00 -41.00	40.00 -41.00
600 D filtered	32.00 -33.00	32.00 -33.00	31.50 -32.00
600 Warren F. filtered	26.00 -27.50	26.50 -27.50	26.50 -27.00
600 s.r. unfiltered	22.00 -24.00	21.00 -23.00	21.00 -22.00
650 s.r. unfiltered	24.50 -27.00	23.50 -26.00	23.00 -24.00
600 flash, s.r.	30.00 -31.00	27.00 -29.00	27.00 -28.00
630 flash, s.r.	36.00 -40.00	36.00 -39.00	36.00 -37.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.50	15.50	15.50
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6¼ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	20.00	20.00	20.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
124-126 A.m.p.	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila	5.75	5.75	5.75
125-127 A.m.p.	5.75 - 5.875	5.75 - 5.875	5.75 - 5.875
128-130 A.m.p.	6.00 - 6.25	6.00	6.00
130-132 A.m.p.	6.50	6.50	6.50
133-135 A.m.p.	7.25	7.25	7.25
135-137 A.m.p.	7.75	7.75	7.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	4.875- 5.00	4.875- 5.00	4.875- 5.00

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

	Nov. 26	Nov. 19	Nov. 12
GASOLINE			
U. S. Motor	9.25 - 9.50	9.375- 9.50	9.375- 9.50
60-62 400 e.p.	10.50 -10.625	10.50	10.50
61-63, 390 e.p.	11.00 -11.125	11.00	11.00
64-66, 375 e.p.	11.25 -11.50	11.375-11.50	11.375-11.50
U. S. Motor, cases (cargoes)	$1.90	$1.90	$1.90
64-66, cases (cargoes)	$2.05	$2.05	$2.05
KEROSENE			
44 water white	7.75	7.75	7.75
41-43 prime white	6.625- 6.75	6.75	6.75
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875	3.875	3.875
*30-32 translucent gas oil	3.875- 4.00	3.875- 4.00	3.875- 4.00
Grade C bunker oil	$0.85 -$0.95	$0.85 -$0.95	$0.85 -$0.95
Grade C bunker oil, cargoes	$0.65 -$0.68	$0.65	$0.65

*Less than ½ of 1% sulfur.

MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.90 -$0.95	$0.90 -$0.95	$0.90 -$0.95
Grade C bunker oil, for bunkering purposes, taxes paid	$1.05	$1.05	$1.05
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.; cold test 0) (Tanker, f.o.b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 - 6.375	6.25 - 6.375	6.25 - 6.375
200 vis. No. 3 unfiltered pale	8.50 - 9.50	8.50 - 9.50	8.50 - 9.50
300 vis. No. 3 unfiltered pale	9.25 -10.50	9.25 -10.50	9.25 -10.50
500 vis. No. 3½ unfiltered pale	10.75 -12.00	10.75 -12.00	10.75 -12.00
750 vis. No. 4 unfiltered pale	12.50 -13.00	12.50 -13.00	12.50 -13.00
1200 vis. No. 5 unfiltered pale	15.50 -17.00	15.50 -17.00	15.50 -17.00
200 vis. No. 5-6 red oil	7.00 - 8.50	7.00 - 8.50	7.00 - 8.50
300 vis. No. 5-6 red oil	8.00 - 9.25	8.00 - 9.25	8.00 - 9.25
500 vis. No. 5-6 red oil	9.75 -10.50	9.75 -10.50	9.75 -10.50
750 vis. No. 5-6 red oil	11.25 -12.00	11.25 -12.00	11.25 -12.00
1200 vis. No. 5-6 red oil	14.50 -16.50	14.50 -16.50	14.50 -16.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Nov. 26	Nov. 19	Nov. 12
Gasoline, U. S. Motor, 53-55 Gravity	8.00 - 8.25	8.00 - 8.50	8.00 - 8.50
Gasoline, U. S. Motor, blends and special cuts	8.50 -10.25	9.00 -10.75	9.00 -10.75
Gas Oil, 30-34, per barrel	$1.05 -$1.25	$1.05 -$1.20	$1.05 -$1.20
Diesel Oil, 27 plus, per barrel	$0.95 -$1.10	$0.95 -$1.10	$0.95 -$1.10
Bunker oil, 14-18, per barrel	$0.70 -$1.00	$0.70 -$1.00	$0.70 -$1.00
Fuel oil, 14-18 per barrel	$0.70 -$1.00	$0.70 -$1.00	$0.70 -$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.25 - 6.00	5.25 - 6.00	5.25 - 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 -$1.85	$1.75 -$1.85	$1.75 -$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.50 -$1.60	$1.50 -$1.60	$1.50 -$1.60

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrels)

	Nov. 26	
	Crude &/or Fuel	Refined Oil
Calif. to U. K. or Continental ports*	25	22-23
Gulf to U. K. or Continental ports*	13	12-13
North Atlantic to U. K. or Continental ports*	11/6	11
Calif. to North Atlantic ports (not E. of N. Y.)	50-55c	64-65c
Gulf and North Atlantic ports (not E. of N. Y.)**	16-17c	20-25c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

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PLANNING NEW STATIONS

THIS is station-planning time. Blueprints are scanned—options are taken—new equipment is considered. And in importance, next to the location itself, is the tanks in which you will store your precious liquids. Just remember "Youngstown" when buying time arrives.

Write for Bulletin No. 15

THE YOUNGSTOWN BOILER & TANK COMPANY
YOUNGSTOWN—OHIO

Offices in Principal Cities

Youngstown TANKS "KEENE MADE" STANDARDIZED

CANADA

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect November 26, 1928
(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Gasoline Total T.W.	Gasoline S.S.	Oil T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	23.5	3	26.5	30	22.5
BRITISH COLUMBIA					
Vancouver	22	3	25	29	23
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	25	3	28	31.5	25
Moncton	25	3	28	31.5	25
NOVA SCOTIA					
Halifax	25	5	30	33.5	25
Sydney	25	5	30	33.5	25
PRINCE EDWARD ISLAND					
Charlottetown	25	5	30	33.5	25

Note: In districts surrounding these points 1c additional is added to city price.

Dealers in Bootleg Gas Go Free in Chicago

CHICAGO, Nov. 23.—Frank Peska, city prosecutor of Chicago, was not able to get a conviction in any of his six cases against filling station operators charged with selling diluted gasoline from pumps on which the globes advertised nationally known brands.

The prosecution of six gasoline retailers started in Chicago on Nov. 19. Mr. Peska had himself bought some premium priced gasoline which proved to be mixed with questionable material and diluted until it was no better than competitive grade.

The court refused to accept the evidence as sufficient to convict under the city's ordinance against deceptive advertising. The judge advised that the evidence was admissable but insufficient. He said it would have to be shown that the dealer not only diluted the branded gasoline but represented the diluted product to be the branded product when he sold it. Moreover, the court will demand proof by analysis that the gasoline so sold is not the branded product.

The court stated that with conclusive evidence as outlined he would be willing to impose the limit of the law ($200 fine) upon any dealer selling bootleg gasoline. The first case tried was dismissed. The remaining five have been postponed until Dec. 5 for trial.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for the whole year, arranged for quick reference)

These Prices in Effect Nov. 26, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	15	2	17	20	14
Newark, N. J.	15	2	17	20	14
Annapolis, Md.	15	4	19	22	14
Baltimore, Md.	15	4	19	22	12
Cumberland, Md.	15	4	19	22	14
Washington, D. C.	15	2	17	20	14
Danville, Va.	15	5	20	23	14
Norfolk, Va.	15	5	20	23	14
Richmond, Va.	15	5	20	23	14
Roanoke, Va.	15	5	20	23	14
Petersburg, Va.	15	5	20	23	14
Charleston, W. Va.	15	4	19	22	14
Keyser, W. Va.	15	4	19	22	14
Parkersburg, W. Va.	15	4	19	22	14
Wheeling, W. Va.	15	4	19	22	14
Charlotte, N. C.	15	4	19	22	14
Hickory, N. C.	15	4	19	22	14
Mt. Airy, N. C.	15	4	19	22	14
Salisbury, N. C.	15	4	19	22	14
Charleston, S. C.	15	5	20	23	14
Columbia S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	17	0	17	18	15
Augusta, Me.	17	4	21	22	15
Manchester, N. H.	17	4	21	22	15
Burlington, Vt.	17	3	20	21	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*21	15
Philadelphia, Pa.	16	*	16	*21	15
Allentown, Pa.	16	*	16	*21	15
Erie, Pa.	†16	*	†16	*20	15
Scranton, Pa.	16	*	16	*21	15
Altoona, Pa.	16	*	16	*21	15
Dover, Del.	16	3	19	21	15
Wilmington, Del.	16	3	19	21	15
Providence, R. I.	17	2	19	20	15
Boston, Mass.	17	0	17	18	15
Springfield, Mass.	17	0	17	18	15
Worcester, Mass.	17	0	17	18	15
Hartford, Conn.	17	2	19	20	14
New Haven, Conn.	17	2	19	20	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†This is official posted t.w. price of Atlantic Refining Co. It is reported that, due to local price conditions, sales of gasoline are being made at Erie from 2c to 4c below this t.w. price.

S. O. KENTUCKY

Ashland, Ky.	17	5	22	24	15.5
Catlettsburg, Ky.	17	5	22	24	15.5
Lexington, Ky.	16	5	21	22	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	17	5	22	22	15.5
Clarksdale, Miss.	17	4	21	23	13
Gulfport, Miss.††	18.5	4	22.5	24.5	14
Jackson, Miss.	15	4	19	21	14.5
Natchez, Miss.	16.5	4	20.5	22.5	14
Vicksburg, Miss.	16.5	4	20.5	22.5	14
Birmingham, Ala.	18	4	22	24	16
Mobile, Ala‡	18	4	22	24	15
Montgomery, Ala.*	17	4	21	22	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	†15.5
Jacksonville, Fla.	18	5	23	25	14.5
Miami, Fla.	19	5	24	26	15.5
Tampa, Fla.	18	5	23	25	14.5
Pensacola, Fla.**	19	5	24	26	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

S. O. New York—T.w. cut 1c, s.s. 2c, through New England, **Nov. 19**, to 17c and 18c generally exclusive of state taxes.

Atlantic Refining—T.w. only cut 1c, New England, to 17c generally, exclusive of taxes, **Nov. 23.**

S. O. Kentucky—S.s. price only cut 1 cent, Lexington, to 22 cents, **Nov. 20.**

S. O. Indiana—S.s. prices only at these points reduced amounts shown: Decatur, 2.2c, to 15c, **Nov. 10**; Kansas City, 2c, to 17.9c, **Nov. 16**; St. Joseph, 2c, to 17.5c, **Nov. 17**; Peoria, 1c, to 14c, **Nov. 18**; Des Moines, 2c, to 18.5c, **Nov. 21.** All prices include state taxes.

S. O. Louisiana—T.w. cut 2c, s.s. 1c, through territory, **Nov. 26.** All commercial discounts abolished and 3c differential established between t.w. and s.s. prices. Knoxville and Nashville t.w. cut 4c.

Kerosene Changes

S. O. New Jersey—Up 1c, Baltimore to 12c t.w., **Oct. 5.**

S. O. Kentucky—Up 2c, Birmingham, to 16c, t.w., **Nov. 19.**

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	15	12.1
E. St. Louis, Ill.	14.4	0	14.4	16.4	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	14	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	17.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Cross, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	18.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.9	2	16.9	16.9	11.3
Kansas City, Mo.	†15.9	2	17.9	17.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	17.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16	4	20	22	13.4
Huron, S. D.	16.3	4	20.3	22.3	13.7
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity contract price schedule on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month; and 3c for 6000 gals. or more a month.

*Includes city tax of ½c

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah.	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	14	5	19	22	14
Alexandria, La.	13	2	15	18	†16
Baton Rouge, La.	12	2	14	17	†14.5
Lake Charles, La.	13.5	2	15.5	18.5	†16
New Orleans, La.	*11.5	2	*13.5	*16.5	†16
Shreveport, La.	13.5	2	15.5	18.5	†15
Lafayette, La.	13	2	15	18	†15.5
Bristol, Tenn.	16	3	19	22	15
Chattanooga, Tenn.	15.5	3	18.5	21.5	16
Knoxville, Tenn.	14	3	17	20	16
Nashville, Tenn.	13	3	16	19	16
Memphis, Tenn.	14	3	17	20	15

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	16	3	*19	20	12

*19c to consumers; 17c to dealers, including tax.

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	15	3	18	20	12
Oklahoma City	15	3	18	20	12
Tulsa, Okla.	14	3	17	19	10
Fort Smith, Ark*	15	†3	18	20	14
Little Rock, Ark.	16	5	21	23	14
Texarkana, Ark.*	14.5	*2	16.5	20.5	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	14	2	16	19	12
Houston, Tex.	14	2	16	20	15
San Antonio, Tex.	12	2	14	17	11
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50 to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Crude Oil Prices (in Effect Nov. 26)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.60
Bradford District Oil in National Transit Lines (Bradford District)	3.60
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.50
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.50
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.40
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.25
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.80
Corning, O., heavy grade	1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.75
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.75

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster (Oct. 17)*	$1.77	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.63

*Wooster crude run prior to Oct. 17, 1928 takes price of $1.67.

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0.60	35-35.9	$1.31
25-25.9	0.67	36-36.9	1.36
26-26.9	0.74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prairie.

Mirando, Tex	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 25	$0.60	27-29.9	$0.75
25-25.9	0.67	30-30.9	0.90
26-26.9	0.74	31-31.9	1.05
Glasscock, Crane, Upton, Winkler Counties			0.65
Chalkfield (Howard Co.)			0.80
Iatan district			0.93
Corsicana heavy			1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0.76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0.86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	$1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0.88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1.02	39-39.9	1.51
31-31.9	1.09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La.	.90
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Aug. 2, 1928

Below 28	$0.75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only

Annual Deer Hunt Held For Texas Oil Men

HOUSTON, Nov. 22.—West Texas oil men have concluded their annual deer hunt as guests of the Grisham-Hunter Corp., Abilene, on a 150,000-acre private game preserve in the Guadalupe mountains. The hosts were T. F. Grisham, president, Judge J. C. Hunter, Matt Grisham and Malcolm McAlpin, all members of the Grisham-Hunter firm.

Guests taking part in the hunt, which began Nov. 14, included J. Edgar Pew, vice president and general manager, Sun Oil Co., Dallas; Frank V. Faulkner, vice president and production manager, Magnolia Petroleum Co., Dallas; Frank Jensen, general passenger agent, Texas & Pacific railroad; G. C. Fraser, New York attorney, H. J. Abrams, Dallas, and Preston G. Northrup, San Angelo, all of the Kloh, Rumsey and Abrams oil royalty interests; Ray McDowell, Dallas; John L. Gray, Shaffer Oil & Refining Co., Chicago and Tulsa; H. H. Wilkinson, vice president, Continental National Bank, Fort Worth; Charles N. Bassett, president, State National Bank, El Paso; T. C. Wildman, Wildman Petroleum Co., Abilene; Allmand Blow, vice president and general manager, American Petroleum Corp., Tulsa; Harry M. Sample, Vacuum Oil Co., Eastland; B. L. Laird, the California Co., Dallas; J. E. Fitzpatrick, president, Deep Rock Oil Co., Fort Worth; Major Surles, Fort Bliss, El Paso; and C. R. Landon, Texas fish and game department.

Venezuelan Crude Tight

NEW YORK, Nov. 24.—The Venezuelan crude market continues relatively tight. A number of contracts for shipment over 1929 are under negotiation but there is little demand for spot cargoes. A contract involving approximately 500,000 barrels of oil was closed the early part of this week for shipment over next year at $0.91 a barrel. It is reported possible to shade this figure on spot business for shipment to the United Kingdom and the Continent but it is doubtful if this price can be bettered for shipment to the United States. At $0.91 a barrel, f.o.b. deepwater in the Lake Maracaibo region, cost laid down north of Hatteras figures around $1.06 a barrel under prevailing tanker rates.

Refinery Opens Sales Offices

TULSA, Nov. 26.—The Big Spring Refining Co. has opened general sales offices at its plant at Big Spring, Texas, to handle tank car sales. R. S. Peterson, president of the company, will be in general charge of sales. Bob Keeler will be his assistant.

Oil Meters
For Every Service

Specially designed and constructed to stand the varying pressures and temperatures to which they are subjected—it's easy to see why these oil meters are widely used in the oil industry. For use on pressure stills, storage tanks, tank wagons and at service stations they have given trouble-free service. This is due to their adaptability to all conditions, no matter how adverse.

When conditions make it necessary, our engineering department works with the operator to fit the exacting demands of his problem. This service, in which our fully equipped mechanical and engineering laboratories are at the disposal of our customers, adapts meters to fit the requirements of the job, and has enabled many companies to eliminate all troubles arising from faulty meters.

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PITTSBURGH, PA.

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Chicago, Illinois.
Dallas, Texas.
Los Angeles, Cal.
Tulsa, Oklahoma.
Seattle, Washington.
Columbia, S. Carolina.
Salt Lake City, Utah.
Kansas City, Missouri.

Crude Oil Prices (in Effect Nov. 26)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek 29-29.9	$0.95
" " 30-30.9	1.02
" " 31-31.9	1.09
" " 32-32.9	1.16
" " 33-33.9	1.21
" " 34-34.9	1.26
" " 35-35.9	1.31
" " 36-36.9	1.36
" " 37 and above	1.41
Elk Basin	1.48
Grass Creek light	1.48
Big Muddy	1.33
Lance Creek	1.48
Rock Creek	1.33
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.48
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.48
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick	†Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	....	$ .85	$ .85	....	$ .75	$ .50	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85	$ .85
15-15.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
16-16.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
17-17.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
18-18.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
19-19.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
20-20.9	.85	.85	.85	....	.85	.85	....	....	....	.77	.77	.77	.77	.86	.85	.85
21-21.9	.89	.89	.89	....	.88	.88	.89	....	....	.79	.79	.79	.79	.89	.86	.86
22-22.9	.93	.93	.93	....	.91	.91	.92	....	....	.82	.82	.82	.82	.92	.87	.80
23-23.9	.97	.97	.97	....	....	.94	.95	....	....	.86	.86	.85	.85	.95	.90	.97
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	....	.90	.90	.88	.88	.98	.93	.94
25-25.9	1.05	1.05	1.05	1.05	....	1.00	1.01	....	....	.95	.95	.91	.91	1.01	.95	.98
26-26.9	1.09	1.09	1.09	1.09	....	1.04	1.04	....	....	1.00	1.00	.94	.94	1.04	.97	1.02
27-27.9	1.13	1.13	1.13	1.13	....	1.08	1.07	....	....	1.05	1.05	.98	.97	1.07	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	1.12	1.10	....	....	1.10	1.10	1.02	....	1.10	....	1.10
29-29.9	1.21	....	1.21	1.21	....	1.16	1.15	....	....	1.16	1.16	1.06	....	1.13	....	1.14
30-30.9	1.25	....	1.25	1.25	....	1.20	1.20	....	....	1.22	1.22	1.10	....	1.16	....	1.18
31-31.9	1.30	....	....	1.30	....	....	1.25	....	....	1.28	1.28	1.14	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	1.30	....	....	1.34	1.34	1.18	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	1.35	....	....	1.40	1.40	1.22	....	....	....	....
34-34.9	....	....	....	1.47	....	....	1.40	....	....	....	1.46	1.26	....	....	....	....
35-35.9	....	....	....	1.53	....	....	1.45	....	....	....	....	1.30	....	....	....	....
36-36.9	....	....	....	1.59	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same price as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Nov. 26	Nov. 19
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.65
Silicate of Soda 40 deg. tank cars, cv	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.70-0.75
Sal Soda wks.	$0.90-1.00	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks. lb.	3.00-4.50	3.00-4.50
Litharge, powered, casks, cwt.	9.00	9.00

Compounders' Supplies

	Nov. 26	Nov. 19
Vegetable Oils		
Linseed carloads, spot lb.	10.40	10.40
Tanks, spot	9.60	9.60
Soya Bean, Tanks, coast, lb.	9.625	9.625
Oleic Acid		
Distilled, tanks lb.	8.75	8.75
Distilled, bbls. lb.	9.50	9.50
Saponified, tanks lb.	9.00	9.00
Saponified, bbls. lb.	9.75	9.75
Lard Oils		
Prime Winter Strained lb.	16.00	16.00
Extra Winter Strained lb.	14.00	14.00
Extra lb.	13.25	13.25
Extra No. 1 lb.	12.875	12.875
No. 1 lb.	12.50	12.50
No. 2 lb.	12.25	12.25
Tallow oil lb.	12.25	12.25
Neatsfoot Oil		
Pure, bbls. lb.	15.25	15.25
Extra, bbls. lb.	13.125	13.125
No. 1 bbls. lb.	12.75	12.75
Cold Pressed lb.	19.00	19.00
Fish Oils		
Menhaden Oil		
Light Pressed gal.	66-68	63-64
Light Pressed, tank cars, N. Y. gal.	59-60	54-56
White bleached gal.	73-74	68-70
Yellow bleached gal.	70-72	65-67
Whale, extra winter bleached, gal.	84	84
Naval Stores		
Steam distilled turpentine, N. Y. gal.	57	54
Steam distilled turpentine, Savannah gal.	52	49
Gum turpentine, N. Y. gal.	61.50	60
Gum turpentine, f.o.b. cars Savannah gal.	58	56
Wood Rosin F, N. Y. bbl.	$8.20	$8.20
Wood Rosin F, Savn'h bbl.	$7.40	$7.40
Gum Rosin B, N. Y. bbl.	$9.10	$9.00
Gum Rosin B, f.o.b. cars Savannah bbl.	$8.35	$8.25
Rosin oil, pure gal.	62	62
Rosin oil, compounded gal.	51	51
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	55-62	55-62

*Nominal.

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Your Name in Gold FREE

$25.00

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361—This Folio is substantially made from heavy, smooth, 5-oz. black cowhide. No flaps—Solid ends. Opens out for full display. Contains eighteen 4-oz. bottles with metal capped corks. Bottles partitioned separately. Case also contains six 1-oz. squat grease jars. Plenty of room for literature and order blanks.

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Plus what?—Plus the fact that it is blended from 450 Bright Stock (Sharples Process) refined in ONE Freedom Plant—and from 100% Pennsylvania Crude Neutrals refined in ANOTHER Freedom Plant. Thus, under one supervision, with the one guarantee of a 49 year old refinery, a line of Freedom 100% Pennsylvania Motor Oils is blended to specifications which appeal to discriminating jobbers — a complete line of oils that enable you to build your business and your customers' businesses on repeat order foundations.

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Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.

Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

OIL STOCKS AND FINANCES

National Petroleum News

S. O. Kentucky to Split Shares; Will Pay 50% in Stock

CLEVELAND, Nov. 24.—Standard Oil Co. of Kentucky will declare a 50 per cent stock dividend if stockholders at their special meeting Dec. 20 approve. The stock of the company will also be split into $10 par shares. Present par value is $25 a share. Directors have just declared a special dividend of 50 cents a share in addition to the regular quarterly dividend of $1 a share.

Action of directors toward a stock dividend of 50 per cent follows similar action by South Penn Oil Co. more than a week ago.

Stockholders of Solar Refining Co., another Standard Oil group member, will vote Jan. 9 on a proposal to reduce the par value of its capital stock from $100 to $25 a share and issue four new shares for each old share.

In addition to asking for a split-up of Standard of Kentucky stock, directors of that company will ask for an increase in the authorized capital from $17,500,000 to $35,000,000. The company had 684,120 shares outstanding at the start of 1928. Reduction in par from $25 to $10 a share will increase outstanding shares to 1,710,300. Payment of a 50 per cent stock dividend on that issue will require issuance of 855,150 additional shares, bringing total outstanding capital to 2,565,450 shares of $10 par.

The result of these capital changes will be that for each two shares now held a stockholder will have 7½ shares of new $10 stock.

Standard Oil Co. of Kentucky is one of the oldest and most prosperous of the Standard Oil group. It has a large marketing territory through the South, much of which has developed into an all-year gasoline market in recent years. It has been among the most liberal of the Standard Oils in distribution of profits to shareholders in the form of dividends.

Independent Oil Grants Subscription Right

NEW YORK, Nov. 24.—Stockholders of Independent Oil & Gas Co. of Nov. 30 record have been given the right to subscribe to additional no par stock at $30 a share. The basis is 3 2/3 shares of new stock for each 10 shares held. Rights to subscribe expire Dec. 21.

There are 959,457 shares outstanding which will be entitled to subscribe to 351,801 additional shares. In case all outstanding 12-year 6 per cent convertible debentures of the company are converted by November 30, and in case all outstanding stock purchase warrants of the company are exercised prior to Dec. 11, 223,901 additional shares may be issued to holders of said debentures and stock purchases warrants and they will be entitled to subscribe for 82,097 additional new shares, making maximum number of new shares possibly issuable 433,898.

Shares issued pursuant to exercise of stock purchase warrants after Nov. 30 and prior to Dec. 11 will be entitled to subscribe to the new stock at the rate mentioned.

Financial Notes

Mid-Continent Petroleum Corp.—Outstanding 6½ per cent first mortgage bonds have been called for redemption March 1, 1929, at 105. About $9,200,000 will be required for the redemption. The company reports it has $11,200,000 in cash and call loans.

Cypress Petroleum Co. of California—20,000 shares offered by Los Angeles bankers.

Indian Refining Co.—Dates for exercising privilege of exchanging refunding preferred stock for common stock on a basis of one share of preferred for five of common, have been changed so exchange may be made any business day.

North Central Texas Oil Co.—Net income for third quarter of 1928 was $61,113 after charges, reserves and federal taxes, compared with $50,621 in second quarter and $43,979 in first quarter. Total for nine months was $115,747, which is more than twice the amount of dividends on the preferred stock.

Cities Service Co.—Net in October available for reserves and common stock dividends was $1,954,831, compared with $1,927,421 in October, 1927.

Rio Grande Oil Co. To Split Stock

LOS ANGELES, Nov. 24.—Directors of the Rio Grande Oil Co. in a special meeting held at El Paso, Texas, Nov. 22, voted in favor of increasing the authorized number of shares from 400,000 shares, a par value $25 each, to 2,000,000 shares of no par value, and to issue five shares of the new stock for one of the old. Stockholders will hold a special meeting in El Paso, Dec. 10, to vote upon the new proposal.

Market value of Rio Grande Oil stock has increased from $16.50 to $186.50 in a year. The high was reached on the Los Angeles Stock Exchange, Nov. 21.

This company and Barnsdall Corp. have proved a new high gravity oil field at Elwood, in Santa Barbara county. Rio Grande now has three wells on production with a daily flow of 10,000 barrels in addition to considerable gas. The company is complete in that it produces oil, operates three refineries, and has a complete sales organization.

Shreveport Companies To Vote on Merger

NEW YORK, Nov. 24.—Stockholders of the Shreveport-El Dorado Pipe Line Co. and the Shreveport Producing & Refining Co. are to be given an opportunity to merge the two organizations.

Pipe line stockholders are to vote on a proposal to increase the capital stock from 100,000 to 200,000 shares and offer 39,000 shares of new stock to holders of shares in the producing and refining company on a basis of one share of pipe line stock for 10 of the other.

Shell Union to Increase Capital

NEW YORK, Nov. 24.—Shell Union Oil Corp. stockholders have approved an increase in the capital stock from 10,175,370 to 20,000,000 no par shares. Of the corporation's 175,370 shares of series A preferred stock none has been outstanding. The present action eliminates these shares and doubles the authorized volume of common stock.

Greasing

16 articles in *National Petroleum News*, published since the first of 1927, have been devoted exclusively to telling how to grease cars properly and profitably. How to build greasing stations and how successful companies sell their grease, are also told in these stories.

Here they are for your file reference:

1928

Changes in greasing system of new models — Nov. 21, p. 74
Station sells 7500 lbs. grease in one season — Oct. 31, p. 32
Proper greasing of cars brings profits — Aug. 22, p. 71
Grease salesman tells how to sell it — July 18, p. 81
Chassis greasing profits hardly scratched — June 13, p. 21
Greasing success means good merchandising — May 30, p. 53
How car lubrication adds to profits — May 23, p. 19
Grease station designed after year's travel — May 16, p. 25
Keeping steady customers at grease stations — Feb. 1, p. 29

1927

Greasing should be done right — Oct. 26, p. 50
Good greasing jobs done in alley — July 6, p. 73
Boosts grease sales by quota — Apr. 13, p. 56
Sells coach lubrication by the mile — Apr. 13, p. 93
Greasing done in formal gardens — Mar. 2, p. 72
Teaches bus and truck lubrication — Feb. 23, p. 89
Greasing on contract carries diploma — Feb. 16, p. 84

The above list of articles is for your convenience in locating them in your file.

If you wish extra back copies, we shall be glad to supply them at 25c a copy. However, our stock of back numbers is limited and we are entirely out of some issues.

On numbers that are exhausted, we can have photostat copies made of the pages you wish at a cost of 40c per page, negative proof.

Libraries in the larger cities generally keep back files of *National Petroleum News* complete.

National Petroleum News

Main Office: 1213 West Third St.

Cleveland, Ohio

Swiss Oil Reduces Debts; Dividends Coming Soon

CLEVELAND, Nov. 24.—Final payment of $200,000 on the purchase price of the properties of the Union Gas & Oil Co. has been made by the Swiss Oil Corp., Thomas A. Combs, president, has announced. This reduced the company's indebtedness to $1,000,000 except for current accounts.

Satisfactory profits have been made by its subsidiary, the Ashland Refining Co., and Mr. Combs praised the management of that company by Paul Blazer.

Mr. Combs said officers expected to resume payment of dividends before long.

The consolidated balance sheet of the Swiss and Ashland companies as of Sept. 30 follows:

ASSETS

Cash	$228,349
Accounts, notes received	164,043
Inventory	409,335
Tax claims	46,701
Non-producing property	9,230
Property and Investments*	7,344,700
Deferred assets	113,681
Total	$8,316,039

LIABILITIES

Accounts payable	$42,682
Accrued items	56,673
Income tax reserve, 1927	3,135
Three-year 7% notes due Jan. 15, 1931	1,000,000
First mortgage 6% notes (Paid Oct. 15)	200,000
Contingent reserve	13,489
Tax reserve, 1928, estimated	35,436
Swiss Oil stock	4,763,100
Ashland Refining preferred	132,000
Ashland Refining common	6,000
Surplus	2,049,223
Minority interest, Ashland	14,302
Total	$8,316,039

*After depreciation and depletion.

Pacific Western Offers Debentures

CLEVELAND, Nov. 24.—Pacific Western Oil Co. has marketed $15,500,000 15-year 6½ per cent sinking fund gold debentures at 100 and interest from Nov. 1. This company has contracted to take over the California producing and prospective oil lands of the Petroleum Securities Co., the E. L. Doheny family corporation. An offering of stock in the Pacific Western Oil Corp., a holding corporation, was made a week ago.

Shell Offers Stock Rights

NEW YORK, Nov. 24.—Shell Transport & Trading Co. will offer stockholders of Jan. 1 record the right to subscribe to one share of ordinary stock for each five held. Shares are of £1 par value.

Wilcox Oil & Gas Co.—In listing its stock on the New York Stock Exchange the company stated it owned 817 oil and gas leases in Oklahoma, Kansas and Texas totaling 326,129 acres; 56 royalty interests in the same states, a refinery in Oklahoma and three natural gasoline plants in Oklahoma and one in Texas.

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100% Pure Pennsylvania Products

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KEROSENE
FUEL OIL
NEUTRALS
BRIGHT STOCKS
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Superior Oil Works
Warren, Penna.

Thieves know and avoid **York Round Door Chests**

Large filling station chains have noticed a marked decrease in the number of attacks by burglars on their stations following the installation of York Round Door Chests.

Insurance companies grant it their lowest burglary rate.

Write your name and address on the margin of this advertisement for complete information.

YORK SAFE & LOCK COMPANY
YORK, PA.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 24 Sales	First	High	Low	Last	Change
37⅛	27⅝	43⅛	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	112,000	40	*43⅞	40	43⅛	+ 3¼
82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	....	.....	9,800	74⅞	74⅞	71⅝	72⅛	— 2½
50¼	35	53⅜	37½	$56,000,000	$ 25	Associated Oil	50cQ	Sept. 29, 28	130	...	48	47	48	+ 1
....	....	63¼	54¼	50,000,000	25	Atlantic Refining (New stock)	a$1Q	Sept. 15, 28	76,000	55⅛	55⅞	53⅝	53⅞	— 1⅛
119	115½	118¼	113½	20,000,000	100	do pfd.	$1.75Q	Nov. 1, 28	130	...	117¾	116½	117⅝	— ⅛
35½	20¾	53	20⅛	30,971,225	25	Barnsdall Corp. A.	50cQ	Oct. 31, 28	112,400	47⅛	48⅞	46⅜	47⅛	— ⅞
32½	20½	51¼	22	581,850	25	do B.	50cQ	Oct. 31, 28	.....	....	....	....	....	.....
18¼	14	23½	12¼	946,518	N.P.	Beacon Oil	....	.....	22,000	22⅛	22½	21	22	— 1/4
32¾	20	35	24	51,524,150	25	California Petroleum	25cQ	Oct. 1, 28	.....	....	....	....	....	.....
96¾	65	94⅞	70	20,980,400	100	General Asphalt	....	.....	47,700	74½	81⅞	74½	81½	+ 7
144⅞	107¼	141½	111	6,662,200	100	do pfd.	$1.25Q	Dec. 1, 28	2,200	118	121⅞	118	121⅞	+ 5⅞
175¾	60⅛	167	127	25,000,000	100	Houston Oil	....	.....	4,800	137	139	132½	132½	— 4½
32¾	17⅝	37½	21¾	(sh) 659,000	N.P.	Independent Oil & Gas	37½cQ	Oct. 31, 28	84,500	37½	38⅝	35⅝	35¾	0
12½	7⅝	39⅜	9	$3,582,670	$ 10	Indian Refining	....	Dec. 15, 20	91,900	34¾	37¾	32	37⅝	+ 3
12	7¼	33½	8½	4,550,110	10	do ctfs.	....	.....	38,400	30	*33½	28⅛	33½	+ 3⅛
112	99	250	101	2,296,400	100	do pfd.	....	Dec. 15, 21	700	165⅛	180¼	165⅛	180¼	+ 5¼
37⅜	20½	39⅛	27⅜	(sh) 3,992,234	N.P.	Lago Oil & Transport	75cQ	Nov. 1, 28	6,800	34	35⅜	34	35⅜	+ 1⅜
18⅛	10	19¾	9⅜	(sh) 1,187,003	N.P.	Louisiana Oil Refining	....	.....	42,000	17¼	18¼	17	17¼	+ 1/8
97	85¼	101	78	$4,000,000	$100	do pfd.	$1⅜Q	Nov. 15, 28	160	...	92	89½	89½	— 2¾
22¾	12	25⅛	12½	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	6,200	19	20	18⅜	19¼	+ ⅛
58½	31	49¾	33	(sh) 2,316,851	N.P.	Marland Oil Co.	....	Mar. 31, 27	227,400	45½	*49¾	45½	48	+ 1¾
320	200	360	250	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 28	40	...	300	290	300	+28
....	....	....	....	12,000,000	100	do pfd.	$2Q	Oct. 20, 28	.....	....	....	....	....	.....
9¼	3	70	4⅝	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	162,700	65	68	60¼	66½	— 1⅞
39⅜	25½	44½	25⅛	(sh) 1,857,461	N.P.	Mid-Continent	....	Aug. 1, 27	245,200	38¾	*44½	38⅜	44	— 5
105	97	115⅛	103¼	$6,718,000	$100	do pfd.	$1.75Q	Dec. 1, 28	.....	....	....	....	....	.....
3¾	1⅜	7⅜	2⅜	24,060,470	10	Middle States	....	July 1, 23	24,800	6	6⅛	5¾	6	— 1/4
2¾	1⅜	5⅞	1½	5,739,750	10	do ctfs.	....	.....	4,300	4⅜	4⅜	4	4	— ⅛
1⅞	1	2¼	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	12,400	1⅛	1¼	1	1⅛	0
65⅞	40⅛	55½	38¼	$50,000,000	$ 50	Pan American P. & T.	....	Oct. 20, 27	11,400	52⅛	*55½	52	53¼	+ 1⅜
66⅜	40¼	58⅜	37¾	121,100,000	50	do B.	....	Oct. 20, 27	165,700	55⅜	58⅞	54¼	56⅞	+ 1⅞
37⅞	16¾	59	15½	(sh) 400,000	N.P.	Pan American Western B.	....	Jan. 30, 27	3,300	18½	19	18	18	— ½
18⅞	8	21¾	11½	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	5,300	15½	15⅜	15	15¼	0
83	54	106¾	70	$2,935,200	$100	do pfd.	....	July 2, 23	200	84	84	80¾	80¾	— 9¼
60¼	36¼	53⅞	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	Oct. 1, 28	41,000	50⅞	*53⅞	50¾	52½	+ 2
1⅜	½	4¼	½	$29,622,925	$ 25	Pierce Oil	....	.....	14,800	3⅛	3¼	3	3	— ¼
24	13½	50	16¼	15,000,000	100	do pfd.	....	Feb. 1, 22	1,700	36	38	36	36	— 1
5½	2½	6¾	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	9,300	5¾	6¼	5¾	6	+ 1/8
33⅞	16¾	29⅞	16	$37,450,850	$ 50	Producers & Refiners	....	Sept. 15, 23	19,200	28⅞	28⅞	27	27	— 2
50	36⅞	47¾	41	2,845,350	50	do pfd.	....	May 1, 25	390	...	47¼	45¾	47¼	+ ¼
33½	25	31⅝	19	75,952,250	25	Pure Oil Co.	25cQ	Dec. 1, 28	226,900	28⅞	*31⅝	28½	30	+ 1½
115½	111⅜	115	108	13,000,000	100	do 8% pfd.	$2Q	Oct. 1, 28	510	...	113½	112½	113½	+ ⅜
28⅝	25⅜	56	24	$43,764,450	$ 25	Richfield Oil	50cQ	Nov. 15, 28	139,200	53⅝	55	51¼	53	— ½
54½	44¼	64	44⅜	(sh) 585,293	13.40	Royal Dutch N. Y. shares	$1.879	Aug. 3, 28	9,200	62	63⅛	61¼	62¾	0
47⅞	41⅜	57½	40⅝	(sh) 67,300	£2	Shell Transport & T.	$1.455	July 23, 28	.....	....	....	....	....	.....
31⅜	24⅜	39¾	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	Sept. 30, 28	237,100	37¾	*39⅜	37½	38	+ ½
26⅜	14¼	27¼	18½	$7,208,080	$ 10	Simms Petroleum	....	Apr. 1, 27	50,100	27⅜	27⅛	25½	26	— 1
22⅜	15	46¾	17⅜	(sh) 4,503,031	N.P.	Sinclair Consolidated	....	May 31, 24	702,300	44	46¼	42½	45⅛	+ ⅝
104½	97	110	102½	$16,310,100	$100	do pfd.	$2Q	Nov. 15, 28	600	109	109	108½	109	0
37⅝	24⅛	42⅝	25	27,396,590	25	Skelly Oil Co.	50cQ	Sept. 15, 28	59,000	41⅞	*42⅝	40½	40¾	— ⅜
60¾	50⅜	78½	53	(sh) 13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 28	151,100	69⅜	*78½	68½	78½	+ 9½
41⅜	35⅛	54⅜	37⅜	$610,195,375	$ 25	S. O. New Jersey	‡25cQ	Sept. 15, 28	192,800	54⅛	*54¾	53	53¾	— ½
34⅛	29¾	41⅛	28¾	431,973,275	25	S. O. New York	40cQ	Sept. 15, 28	381,100	38⅞	40⅞	38½	39⅛	+ ½
34⅞	30	74⅞	31¼	(sh) 1,300,532	N.P.	Sun Oil	25cQ	Sept. 15, 28	9,700	73½	74¾	72⅝	73⅞	+ ⅞
101⅜	99	109½	100	$5,000,000	$100	do pfd.	$1.50Q	Dec. 1, 28	160	...	107	103	106	— 1
6½	3⅛	14	2½	(sh) 1,186,078	N.P.	Superior Oil Corp	....	Dec. 20, 20	487,200	10⅝	*14	10½	13¾	+ 2¾
58	45	74¾	50	$210,577,050	$ 25	The Texas Corp.	75cQ	Oct. 1, 28	132,100	73⅜	74⅜	68½	68¾	— 5¼
18⅞	12	26⅝	12½	8,380,340	10	Texas Pacific Coal & Oil	....	Jan. 3, 28	73,100	22⅛	25⅜	21	23¼	+ ⅜
29⅛	19	36	19⅜	(sh) 2,168,498	N.P.	Tide Water Oil Co.	20cQ	Sept. 29, 28	8,800	34¼	35½	33⅝	34	— ⅛
90½	85	96	87	$20,705,200	$100	do 5½% pfd.	$1.25Q	Nov. 15, 28	1,200	95¼	95½	94¾	94¾	— ½
19⅛	15¾	24¾	14¾	(sh) 4,824,766	N.P.	Tide Water Associated	....	Aug. 1, 27	123,600	34¼	24¼	23	23⅛	0
90¾	85	90¾	82½	$72,745,958	$100	do pfd.	$1.50Q	Oct. 1, 28	8,800	90	90	88½	90	+ 1¼
10⅝	3⅜	14½	7	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	539,200	11½	*14½	11½	13¼	+ 1¾
56½	39⅝	58	42¾	$40,841,100	$ 25	Union Oil of California	50cQ	Nov. 10, 28	49,600	54½	*58	53⅜	55½	+ 1
127½	94	128½	110	31,061,200	100	Union Tank Car Co.	$1.25Q	Dec. 1, 28	100	118	118	118	118	— 4
34½	24½	44⅞	26	(sh) 357,197	N.P.	Warner Quinlan	50cQ	Oct. 1, 28	17,400	42¾	42⅞	41⅜	42	— 1⅜
27½	20	35	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 20, 28	24,200	34¾	*35	34⅜	34¾	— ¼
....	....	22½	18⅜	(sh) 418,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	2,100	21⅝	22	21¼	21¼	— ⅜

•New High †New Low ††Ex-dividends ‡Also extras s-Stock a-On old $100 stock Total Sales 5,234,120

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Nov. 23 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)	6,831	3⅝	3⅞	3½	3½	— ⅛
....	....	7⅝	6¾	N.P.	do pfd.	3,183	7⅝	7⅝	7½	7½	— ⅛
98⅝	80⅞	130	90¾	100	Colombia Gas	.....	....	....	....	....	.....
107⅞	100	124	107	100	do pfd.	.....	....	....	....	....	.....
15	7⅛	10	6⅞	10	Devonian Oil	285	9	9	9	9	0
....	....	15	9	10	Dixie Gas & Util.	.....	....	....	....	....	.....
....	....	95	75	100	do pfd.	.....	....	....	....	....	.....
117½	115	116	115	100	Duquesne Light pfd.	.....	....	....	....	....	.....
....	....	85	80½	100	Fayette County Gas	.....	....	....	....	....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas	.....	....	....	....	....	.....
59¼	37¼	66	48⅝	$ 25	Lone Star Gas	3,965	64½	65	64½	64½	0
....	....	38	35	25	Petroleum Exploration	100	33½	33½	33½	33½	— 1
....	....	.50	.50	....	Phoenix Oil pfd.	.....	....	....	....	....	.....
3⅜	3	4⅞	3	5	Pittsburgh Oil & Gas	395	4	4	4	4	0
8	5⅛	7¼	5¾	10	Salt Creek Cons.	540	6	6	5¾	5¾	— ¼
26½	17	22	16½	10	Tidal Osage	500	16½	16¾	†16½	16¾	— 2¾
43	33	40	30½	N.P.	Waverly Oil Wks. A	397	38	*40	38	38	+ 1
....	....	19	16	$ 25	Wiser Oil	400	16	16	16	16	0

*New high record †New low.

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Nov. 23 Sales	First	High	Low	Last	Change
....	....	....	....	....	Ark. Gas (old)	.....	....	....	....	....	.....
95	88	140½	120	25	Gulf Oil	.....	....	....	....	....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	....	....	....	....	.....
10¾	5½	9	4¾	25	Leonard Oil & Dev.	2,500	6	6	6	6	— ½
....	....	9⅞	9⅞	....	Pennkas Oil & Gas	200	9⅞	9⅞	9⅞	9⅞	.....
2¼	1¾	....	....	5	Pittsburgh Oil Dev.	.....	....	....	....	....	.....
31	19	30¼	16¾	5	Plymouth Oil	2,797	25	*30¼	25	28¾	+ 3¾
6	5	4¾	4	5	States Oil	.....	....	....	....	....	.....
3⅜	1½	4½	2¼	1	Texon Oil & Land	185	3½	3½	3½	3½	— ¼
23¼	18	18	15	10	Tidal Osage Non-vgt.	.....	....	....	....	....	.....

*New High †New Low x Ex Dividend

Cleveland Stock Market

Nov. 23	Par Value	Bid	Asked
Canfield Oil Co.	100	180	184
do pfd.	100	103	...
Fred G. Clark	10	7	8
National Refining	25	37	38
do pfd.	100	136	...
Paragon Refining Co.	25	17¾	18⅛
do pfd.	N.P.	42	44
do ctf. of deposit	..	16½	18½

x Ex dividend.

Royal Dutch-Shell—The Flintcote Co., newly acquired subsidiary, has declared a 100 per cent stock dividend. Directors of the company just elected are: J. C. Van Eck, president, Shell Union Oil Corp.; James H. Brookmire, treasurer, Shell Union; Richard Airey, president, Asiatic Petroleum Corp.; Avery D. Andrews, director, Shell Union, and Frederick Allen of the firm of Lee, Higginson & Co., brokers. Flintcote has contracted to buy the Beckman-Dawson Roofing Co., Chicago.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

REFINERY COST ACCOUNTANT now open for position, thoroughly familiar with pipe line and production accounting. Address Box 219.

REFINERY ACCOUNTANT twelve years experience in all phases of Refinery Accounting, including yields and costs of shell and cracking units. Address Box 209.

SUPERINTENDENT OR MANAGER. College graduate, 39 years of age, thirteen years experience with construction and operation of all modern equipment, paraffine and asphaltic base crudes. Can organize and personally supervise sales of all petroleum oils and greases. Apply Box 213.

REFINERY SUPERINTENDENT with years of experience in both operation and construction wishes to make connection with some progressive company. References and history of experience gladly furnished. Address Box 223.

Situations Open

CHEMIST WANTED

with plant or laboratory experience in lubricating oil manufacture. Submit complete details of experience and personal history in reply.

Address Box 220

EXPERIENCED RESEARCH CHEMIST wanted by old established and completely rounded out oil company. Submit by letter complete history and qualifications. Address Box 217.

GRADUATE ENGINEER

With minimum three years gasoline plant and other oil field experience for sales work in South America. Must be single. State salary desired to start, age and past experience.

"SALES ENGINEER" c/o National Petroleum News, 904 World Bldg., Tulsa, Okla.

MEN—INTERESTED SOUTH AMERICAN WORK with large oil, mining companies who pay fare and expenses write for our warranted service offer. South American Service Bureau, 14,600 Alma, Detroit, Mich.

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Know your Stuff
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Petroleum Products
Rackliffe Petroleum Testing Laboratories,
New Britain, Conn.

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Frick Building **PITTSBURGH, PA.**

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"Petrosolve:" A paste dissolved in pale or red viscous neutrals produces clear translucent opal or ruby cup, gun or gear grease.

"Koldbase:" A paste cold mixture for making gun or gear grease.

"Kastorbase" (contains no castor oil) for motor or caster machine oils.

Free samples with instructions to oil jobbers.

Ask about our 5 and seventy-five gallon laboratory and experimental gas or steam heated compounding kettles.

F. E. Martin & Co., Lake Bluff, Ill.

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DALE W. MOORE

532-533 Mayo Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178.
L. D. 136

Wanted to Buy

PRODUCING PROPERTIES WANTED—Purchase or lease producing oil properties. Good location. Address—GEB, Room 916, 342 Madison Ave., New York City.

For Sale

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, DECEMBER 11, 1928, BY UNITED STATES GOVERNMENT. December 11, 1928, at Pawhuska, Oklahoma, about 30,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in three annual instalments, with acceptable security. Within advertised area there are about 9,870 wells producing from one barrel to 400 barrels each, the total daily production for August, 1928, being about 50,300 barrels; also, there are about 50 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for fifty cents each, also logs of producing oil or gas wells for twenty-five cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

For Sale

ONE OF BEST GASOLINE BUSINESS in Northern Oklahoma consisting of one bulk station, two filling stations, doing $75,000 a year in Blackwell and Tonkawa. Address Box 235.

75 H. P. REEVES THREE CYLINDER GAS ENGINE FOR SALE

direct connected to W. E. 125-250 volt D. C. Generator. Complete with switchboard, instruments, air compressor, air and gas tank.

Address Box 224

TWO NEW RECTANGULAR STEEL TANKS for sale. Suitable for asphalt or heavy oil. Equipped with heating coils, capacity 28,000 gallons each. Size: Length 44 ft.; height 8 ft.; width 10 ft. 9 in. 5/16 in. steel plate. Will sacrifice. In New York. Address FREDERICK STARR CONTRACTING CO., 250 W. 57th St., New York City.

WHITE—5-TON TANK TRUCK—1927 MODEL

with fifteen hundred gallon, 5-compartment Davis Welding Company tank, with can racks, in wonderful shape—tires good. Price—$2,000.

Address—Mack-International Motor Truck Corp., 1064 Broadway, Albany, N. Y.

Call for Bids to Purchase Government Royalty Oil from Salt Creek field, Wyoming. The Secretary of the Interior invites sealed bids to be submitted at his office, Interior Department Building, Washington, D. C., on or before noon of December 10, 1928, for the royalty oil accruing to the United States from leases on Government land within the Salt Creek oil field in the State of Wyoming, for a period of three (3) years beginning January 1, 1929. For the calendar year 1927 the total Government royalty oil from the Salt Creek field amounted to approximately 1,920,000 barrels, and for the period from January 1 to August 31, 1928, to approximately 1,280,000 barrels, the average gravity in both years being in the range from 36.0 to 36.9 degrees A. P. I.

Bids must be based upon the highest posted field price for oil of like gravity in Oklahoma and Kansas, and or in Wyoming, whichever is the higher, and must be stated as a differential in cents per barrel from such posted price. Delivery of royalty oil will be made on each leasehold for the account of the successful bidder. Payments for the royalty oil are to be made to the Register of the United States Land Office at Cheyenne, Wyoming, on or before the fifteenth (15th) day of each month following that in which delivery is made and shall be computed on the basis of tank measurement with (2) per cent strapping in terms of standard barrels at sixty (60) degrees Fahrenheit.

The successful bidder will be required to furnish a corporate surety bond in the sum of $250,000 conditioned upon full and complete compliance with the terms of the contract.

The Secretary of the Interior may accept any bid which in his judgment is most advantageous to the Government, and reserves the right to reject any or all bids.

Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., the envelope to be marked plainly, "Bid on Salt Creek royalty oil." No bid received after the time herein fixed for submitting bids will be considered.

Additional information can be obtained from the Geological Survey, Department of the Interior, Washington, D. C., or from the field offices of the Geological Survey at Casper, Wyoming. ROY O. WEST, Secretary of the Interior.

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 W. 3rd St., Cleveland, Ohio, unless otherwise specified.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 23 Sales	First	High	Low	Last	Change
21⅝	17⅞	22⅛	17	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	6,800	18⅜	19	18¼	19	+ 7/8
21½	17¾	20½	16⅛	.....	£ 1	do cts. non-voting	.....	.....	1,400	18⅜	18¾	17½	18	— ½
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	2¾	2¾	2½	2½	— 5/8
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	44½	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 28	.....	.....	.....	.....	.....	.....
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	Sept. 15, 28	100	68¼	68¼	68¼	68¼	— 1½
126	76½	161	117¾	3,000,000	25	Chesebrough Mfg	‡$1Q	Sept. 29, 28	400	150	150	148½	150	+ 4
22¾	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	43,900	19⅞	20	19⅜	19¾	— ¼
137	89	114	79½	1,500,000	50	Cumberland Pipe Line	$15	Sept. 15, 28	.....	.....	.....	.....	.....	.....
68½	47	88	64½	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	250	70	72	70	72	+ 1½
13½	3½	13	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	7¼	7¼	7¼	7¼	— ¼
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	10	83	83	83	83	0
60½	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	20	83¼	83¼	83¼	83¼	+ ¼
68½	54	114¾	60	73,685,700	25	Humble Oil & Refining	‡30cQ	Oct. 1, 28	74,800	108½	*114¾	105⅞	105⅞	— 6½
182	123¾	264	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 28	850	258	259	255	255	— 3
64¾	37¾	104	56¾	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Dec. 1, 28	11,500	94	94	89½	90⅜	— 4⅛
94½	61	91⅞	74⅛	$ 5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Nov. 15, 28	2,800	84	84	82½	82¾	— ¾
39	28¼	55	35	(sh) 7,123,544	N.P.	International Petroleum	25c	June 30, 28	78,500	50⅜	51	48½	49	— 1⅜
24	13¼	32⅜	19⅛	6,363,350	12.50	National Transit Co	‡25cQ	Sept. 15, 28	2,300	23¼	23⅜	22½	23½	+ ¼
44⅛	31¼	75	37½	5,000,000	100	New York Transit	.....	July 15, 26	150	70	70¼	70	70¼	— ¾
100	70	125	56⅛	2,000,000	50	Northern Pipe Line	a)$3S.A.	July 2, 28	100	63¼	63¼	63¼	63¼	+ ¼
67⅞	52	78½	58	60,000,000	25	Ohio Oil Co	50cQ	Sept. 15, 28	1,375	77	78	72¾	75¾	— 2¼
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	1,700	38½	39	38	38	— 1
55⅛	45⅜	65¼	46	60,479,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	24,600	54⅞	*65¼	54¼	64⅜	+ 9⅜
190	132	249	172	81,000,000	100	Prairie Pipe Line	$3.50Q	Oct. 31, 28	5,230	219	*249	218	249	+30¼
201½	175½	216	167	4,000,000	100	Solar Refining	$5S.A.	June 20, 28	200	214½	214½	211½	212	— 4
27¾	15½	35⅞	12	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	1,100	14⅞	18¾	14⅞	18¾	+ 4
41¾	35	81½	36¾	20,000,000	25	South Penn Oil	‡50cQ	Sept. 29, 28	9,300	68⅛	68½	67	67½	— 1
83	55½	100¾	70	3,500,000	100	South West Pa. Pipe Lines	$1Q	Oct. 1, 28	400	85½	85½	80	80½	— 3¾
81½	64⅝	95⅞	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	Sept. 15, 28	108,700	87⅝	*95⅞	87⅛	90½	+ 3½
20⅞	14⅜	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	2,200	22¾	23¾	22½	22½	— ½
130	111½	179¾	122¼	17,103,011	25	S. O. Kentucky	$1Q	Sept. 29, 28	23,400	173	*179¾	170	176⅞	+ 3⅜
49½	40	54⅞	39⅜	4,601,100	25	S. O. Nebraska	63cQ	Sept. 20, 28	2,700	50⅛	*54⅞	50	52¼	+ 1¼
87½	72	111½	71	14,000,000	25	S. O. Ohio	62½cQ	Oct. 1, 28	1,250	104	105½	103	103¼	— 2¼
122	117¼	125	116	7,000,000	100	do pfd	$1.75Q	Dec. 1, 28	80	117¼	119	117¼	117½	— 1½
21	14½	26	16	861,466	25	Swan Finch Co	30c	June 30, 28	.....	.....	.....	.....	.....	.....
.....	.....	101¼	72	126,154,100	25	Vacuum Oil	75cQ	Sept. 20, 28	25,500	98¾	*101¼	97	98⅝	— 5/8

*New high †New low xEx dividend ‡Also extras. (a)$50 Special Sept. 1, 1928

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Sales	Week First	Ended High	Nov. 23 Low	Last	Ch'ge
2⅛	.55	1½	.65	$ 5	Amer. Con. Oilfields	33,000	.71	.79	.71	.72	— .02
7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	210,100	8⅝	*9½	8⅜	9¼	+ ⅜
2⅜	1	4¼	2¼	$ 10	Argo Oil	7,700	2⅜	4	2⅜	3⅞	+ 1¼
9¾	6¾	10¼	3⅜	10	Arkansas Nat. Gas	3,400	3⅝	3¾	3⅜	3½	0
.....	.....	2⅜	3⅞	.....	Barnsdall deb. war	154,800	24⅜	24½	22⅞	23⅜	— 1
40	20½	55	29⅞	N.P.	British American	100	48	48	48	48	— 2
28¼	15½	23⅞	4	25c	Carib Syndicate	105,900	19⅜	4⅜	†4	4	—15¾
.....	.....	.....	.....	.....	do ctfs. of dep	.....	.....	.....	.....	.....	.....
58¾	40¼	74½	54	$ 20	Cities Service	36,900	72½	73	72	73	+ 1/8
95⅜	87	103½	94½	100	do pfd	2,400	99⅜	99½	99⅛	99⅜	— ⅛
8⅞	7⅜	9⅝	8⅞	10	do pfd. B	800	9¼	9¼	9¼	9¼	+ 1/16
29¼	22½	94	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅛	2¼	1	1	Colombia Syndicate	6,700	1⅜	1⅞	1¼	1⅞	+ 1/16
9⅜	6⅜	15⅜	6⅜	10	Consolidated Royal	300	6½	6½	6½	6½	0
14⅞	9½	17½	10	N.P.	Creole Syndicate	58,800	12¼	12⅜	11¾	12¼	— ⅛
3	.50	3¼	.76	N.P.	Crown Central	3,600	1⅜	1⅞	1½	1⅜	0
12	4	33¾	8¼	N.P.	Darby Petroleum	4,600	28	28	27	27	— 1¾
11½	4	13½	7⅞	.....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16⅜	4	21⅛	7½	N.P.	do pfd	100	21⅜	*21⅜	21⅜	21⅜	+ ⅛
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	165	101⅜	$ 25	Gulf Oil Corp	98,500	154⅞	*165	153	157⅞	+ 7⅞
2½	.80	7⅞	1	10	Intercontinent Pet	189,500	1⅝	2⅜	1½	2⅜	+ ⅜
2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	800	2¼	2¼	2	2	— ½
10⅞	5⅛	9⅜	5⅛	N.P.	Leonard Oil & Dev	4,800	6	6⅜	6	6	0
27½	20	43⅜	20	N.P.	Lion Oil & Refg	19,400	40⅛	40½	37⅜	39	0
59⅜	37	65⅞	48⅝	$ 25	Lone Star Gas	2,800	64	65	64	64½	+ ⅛
27⅛	.80	17⅞	.54	1	Magdalena Synd	18,400	70	72	65	66	— 4
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	34½	N.P.	Margay Oil	400	35½	36⅛	35	36	0
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	2⅜	N.P.	Mexico-Ohio Oil	400	3⅞	3⅞	3¾	3⅞	+ ⅛
1½	1	1⅜	.76	$ 1	Mountain & Gulf	13,000	1¼	1¼	1⅛	1¼	0
29¼	22¾	28⅝	19½	10	Mountain Producers	1,900	22	22¼	21⅜	21⅞	— ⅛
5⅞	4⅝	5⅝	4¼	5	New Bradford	2,900	4⅝	5	4⅝	4⅞	+ ⅛
6¼	4	5½	3	10	New England Fuel	200	3⅛	3⅛	3⅛	3⅛	— ⅛
16	9¼	11⅜	7⅛	1	New Mex. & Ariz	7,200	8⅛	9	8	9	+ ½
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
.....	.....	40	39⅛	.....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
12⅝	9½	13¼	10	N.P.	North Cent. Texas	1,100	10⅛	10⅜	†10	10¼	— ¼
23⅞	21¼	.....	.....	.....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2¼	N.P.	Pandem	4,330	3⅛	3⅜	2⅞	3⅛	— ⅛
12⅛	7	15⅝	8½	N.P.	Panapec Oil	10,400	11⅜	11½	11	11½	0
9	7⅝	20	10⅜	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅜	7¾	4⅞	10	Pennok Oil	800	6	6½	6	6½	+ ⅛
.....	.....	5⅜	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	13	4⅛	N.P.	Reiter-Foster	43,000	9½	9¾	9⅛	9⅛	— ⅛
28⅜	15	31½	18	$ 25	Richfield Oil pfd	.....	.....	.....	.....	.....	.....
.....	.....	23	7½	.....	do warrants	.....	.....	.....	.....	.....	.....
7	4½	10⅜	4⅜	N.P.	Ryan Consolidated	15,400	9	*10⅜	8⅝	10¾	+ 1¾
8	5¼	7¼	5⅝	$ 10	Salt Creek Cons	800	5⅜	5¾	5¾	5⅝	— ⅛
35½	27¼	35	23¼	10	Salt Creek Prod	7,100	25⅜	26	25½	25⅞	— ⅜
7	1¾	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
.....	.....	4⅝	3	1	Texon Oil & Land	17,600	3¾	3⅛	3⅛	3⅛	— 1/16
26½	17	22⅞	13	10	Tidal Osage	1,300	16¾	17¼	16¾	16¾	+ ⅛
23¾	15	21¼	13½	10	do non-voting	1,700	15¾	16⅞	15¾	16	+ ½
92	63½	91⅞	75	100	Transcontinental pfd	600	90½	*91⅞	86½	86½	— 3¼
23¼	7	62	18	10	Venezuela-Mexico	300	61	*62	61	62	+ 1⅞
7⅜	4¼	8⅞	4⅜	5	Venezuelan Petrol	.....	.....	.....	.....	.....	.....
8	4¾	8¼	4⅞	$ 1	Woodley Petroleum	400	5½	5½	5⅜	5⅜	— ⅛
6	1¾	8¾	2¼	25	Y Oil & Gas (new)	20,700	5⅞	7⅛	5¼	6	+ ½

*New High †New Low xEx Dividend

New York Curb Bonds

Week Ending Nov. 23rd

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	115	113	114	+1
Cities Service 5s '66	94⅞	93⅝	94⅞	+ ⅜
Cities Service G 5½s '42	93⅝	93	93⅜	— ⅛
Cont. Oil 5¼s '37	97	97	97	0
Empire O & R 5½s '42	93	92¼	93	0
Galena Oil 7s '30	100½	100½	100½	— ⅛
Gulf Oil 5s '37	102	101¼	101½	+1
Gulf Oil 5s '47	102	101½	101½	— ½
Indep. Oil 6s '39	115⅞	112¼	112½	—3¼
Richfield Oil 6s '41	130¼	130¼	130¼	—4¾
Richfield Oil 5½s '31	106¼	103½	105½	+1½
Sun Oil 5½s '39	101¾	101	101	— ¼

New York Bonds

Week Ending Nov. 23

	High	Low	Last	Ch'ge
Atlantic Refg. deb. 5s	102⅜	101⅝	102¼	+⅜
Barnsdall Corp. 6s	145½	142⅝	143	—3¼
Barnsdall Corp. 8s ex-war.	97⅞	97⅜	97¾	+ ¼
Cal. Pet. 5s	103¾	103	103½	+ 5/8
Cal. Pet. 5½s	104¼	103⅛	104	— ¼
General Asphalt 6s	110½	108⅞	110	—1¾
General Pet. 5s	102½	101¼	102½	—1¼
Humble Oil & Refg. 5s	100⅝	100	100⅜	— ¼
Humble Oil & Refg. 5½s	102	101¾	101¾	0
Mid Cont. Pet. 6½s	105¼	105	105	0
Pan Amer. P & T 7s	104⅞	104½	104¾	0
Pan Amer. P & T 6s	107½	105¼	106½	+ ½
Pan Amer. P & T 6s	100	97½	99¼	+1¼
Pierce Pet. 5½s	95	94⅝	94⅝	— 3/8
Prod. & Refg. 8s	111	111	111	+ ¼
Pure Oil 5½s	101	100⅝	100⅝	— ⅜
Shell Union Oil 5s	98⅞	98½	98½	— ⅜
Simms Pet. 6s	102	100½	100½	— ¾
Sinclair Con. Oil 7s	104	103⅜	103⅜	+ ¼
Sinclair Con. Oil 6½s	101½	101	101½	+ ¼
Sinclair Con. Oil 6s D	99¾	99⅛	99½	0
SinclairCon.OilCrude5½s	98	97¾	97¾	+ ¼
Sinclair Pipeline	96½	95½	95½	— ½
Skelly Oil 5½s	94¾	94¼	94½	— ¼
S. O. N. Y. 4½s	98¼	97¾	97¾	— ½
S. O. N. J. 5½s	103	102¾	102¾	0
Superior Oil	100	100	100	0
Union Oil of Calif. 6s A	109	109	109	0
Union Oil of Calif. 5s C	99⅝	99⅛	99⅝	+ ⅛
White Eagle Oil 5½s	105¼	104⅛	104⅛	— ⅜

Oil Dividends

	Payable	Amount	Stock of Record
Cities Service m	10c	Jan. 2	Dec. 15
do stock	½%	Jan. 2	Dec. 15
do pfd. m	50c	Jan. 2	Dec. 15
do pfd. BB	50c	Jan. 2	Dec. 15
do pfd. B	5c	Jan. 2	Dec. 15
National Transit q	25c	Dec. 15	Nov. 30
No. Cent. Texas pfd. q	$1.62½	Jan. 2	Dec. 10
Penn-Mex Fuel	75c	Dec. 15	Dec. 1
S. O. Ohio q	62½c	Jan. 2	Dec. 7
Tidal Osage q	50c	Dec. 15	Dec. 1
S. O. Kentucky q	$1	Dec. 31	Dec. 15
do special	50c	Dec. 31	Dec. 15

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